THE THEORY AND TEACHING OF FINANCE AND ACCOUNTING IN THE TRANSITION ECONOMY

PROCEEDINGS OF THE
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TARTU, MAY 16–17, 1994

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THE THEORY AND TEACHING OF FINANCE AND ACCOUNTING IN THE TRANSITION ECONOMY

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PREFACE

In summer 1993 a group of Estonian lecturers participated at summer school organised by Bentley College. In discussion concerning possibilities of continuing and facilitating the cooperation between Bentley College and Tartu University an idea was arisen by professors Vambola Raudsepp and George Hachey to arrange a common academic conference. Now it has been realized. On May 16–17, 1994, an Estonian–American academic conference on theme "The Theory and Teaching of Finance and accounting in the Transition Economy" took place in Tartu. Also there is published a collection of reports and theses hold in the conference. Based on the opinion of the conference organizers the undertaking was a success, which was mainly thanks to the interesting and substantive reports, a numerous audience (over 60 students and more than 40 scientists and lecturers) and active discussions. It is hoped that useful knowledge and arisen ideas will find extensive application in advancing Estonian economy, economic education and economic policy.

Lot of friends and colleagues were involved in organizing the conference. Special thanks to the organizators prof. George Hachey and prof. Vambola Raudsepp, assist. prof. Toomas Haldma and assist.prof. Jaan Alver also coordinators Viive Uus and Ülle Vaaks. Thanks from all our hearts to Estonian newspaper "Postimees", founded in 1857, and to colleagues from Bentley College for substantial financial support.

With best wishes and hope for further meetings, in Tartu, in July 1994.

Prof. Mart Sõrg
Chairman of the Conference Organizing Committee

THE IMPLEMENTATION OF ACCOUNTING PRINCIPLES IN ESTONIAN FIRMS

Toomas Haldma

Accounting has been called "the language of financial decisions" to prepare and manage the financial aspects of decisions. As accounting presents the feedback-function within the management system of the enterprise, successful implementation of the accounting system depends on the coordination of the whole management structure and internal allocation of managerial functions. In the process of transition the introduction of subjective elements in the management practice has substantial influence on the design of management system and consequently on a tremendous change in philosophy. The selections of best decisions based on objective assessments of alternatives of activities will have substantial role. Unfortunately the structural departments in Estonian enterpises are not ready and able to implement mentioned tasks. It concerns also accounting field.

Present stage of accounting philosophy and practice in Estonia has been influenced by followng features from the past:

- Long-term isolation from market economy and development of economic thought;
- Deformation of the fundamentals of international economic science, research and education (centrally governed economy was the only accepted line);
- Differences in economic terminology used in former USSR and market economy countries.

In the period of centrally planned economy the predominant purposes of accounting were following:

- centralized control over the achievements of plan targets through the economic use of resources;
- protection of socialist property.

During the Soviet era and also after the introduction of the Estonian Accounting Act, company accountants were regarded as book-keepers and their prime responsibility was to ensure that company accounting was compiled with appropriate laws and regulation. The accountants were generally not involved in decision making or in monitoring pro-

fitability and budgets. As accounting was and still is not a management tool, the responsibility, orientation in market circumstances and ability to prepare or to make financial decisions are not the main features of an accountant. Consequently subjective elements are removed from accounting function. The accountant was and still is accustomed to rely upon detailed instructions and guidance in all aspects of their job.

A first step towards the formation of accounting environment of market economy in Estonia was made through Estonian Accounting Act in 1991. The introduction of subjective elements (depreciation rates, inventory valuation methods etc. decided by enterprises) in the accounting practice and formation of particular accounting policy is a big change in philosophy. The change from cash-basis accounting to accrual-basis accounting, the introduction of some important (unfortunately, not all, but proceeding from particular circumstances, it's also intelligible) international accounting principles — realization principle, matching principle, historical cost principle — and also interrelation between the varios elements of the financial statements has posed problems for a large number of accountants. The next step, introducing remaining international underlying principles, recommended in International Accounting Standards (IAS) and in EC Company Law Directives (4th, 7th and 8th directives) and other accounting elements will put even greater demands on the profession.

In circumstances of expanding competition the role of accounting and accountant in the process of preparation the financial decisions will rapidly become more important. But some obstacles are making it more difficult to ensure mentioned direction:

1) Undetermined allocation of responsibilities in the financial activities in companies, principally between financial directors and chief accountants;
2) Continuously changing and improving national business legislation. As a result the accounting departments has to rearrange the operating and concentrate often in particular details. In such conditions it's difficult to lay stress on design of the accounting information system. Still we can observe sufficient progress in this item during last three years.

Since the adoption of Accounting Act the main issues and practical needs in all-day operating of accounting departments have been chan-

ged and developed. Proceeding from the changes the evolution of accounting field in Estonian firms can be divided into following large stages:

I Recording and posting the transactions according to new (accrual-basis) underlying principles and compiling the formats for financial statements;

II Producing a familiarity with international accounting principles (realization principle, matching principle, cost principle etc.) and how they can be integrated into the present accounting (book-keeping) system;

III Development of practical skills for analysis of financial statements and annual reports;

IV Introduction of internal accounting system, e.g. in the area of risk management, cost accounting, managerial accounting, controlling etc. The main emphases are undertaken in such important areas of practice as budgeting, cost-volume-profit analysis, cost allocation etc.

In addition to the professional skills corresponding training and retraining system has to be built up. The retraining process has to provide the participants with systematic overview of basics of accounting in market economy, also on basis of international comparative materials and information. This process is continuing and developing.

The questioning carried out among adminitrative staff (general directors, financial directors, chief accountants) of more as eighty Estonian firms demonstrated that only in 3% of enterprises the accounting emphasis has remained on the compiling of financial statements. For 75% of firms it has removed to the area of managerial accounting. Financial statement analysis served as a target in 22% of the total amount of firms, 13% pointed out the implementation of computerized accounting system.

Accounting is defined as information process to permit informed judgements and decisions by the users of the information (American Accounting Association, p.1). Consequently, accounting is oriented to the users — financial accounting is meant primarly for external use, while managerial accounting information is meant for internal use. For external users the most important characteristics of accounting information are relevance, comparability and reliability. These characteristics will be warranted by implementation of internationally underlying accounting concepts and principles. At the next step of the

accounting reform in Estonia, which will be realized by enforcement of new Estonian Accounting Law, obviously in 1995, will be introduced in addition to the realization, matching and historical cost principles following concepts and principles:

- business entity concept;
- going-concern concept;
- stable monetary unit concept;
- time-period concept;
- objectivity principle;
- materiality principle;
- consistency and comparability principle;
- prudence principle;
- disclosure principle.

These concepts and principles form in some senses financial accounting framework to which accounting information should correspond to.

According to the 29th International Accounting Standards "Financial Reporting in Hyperinflationary Economies" the financial figures of Estonian firms are not internationally available. Hyperinflation is indicated by characteristics of the economic environment of the country, for instance, if the cumulative inflation rate over three years is approaching, or exceeds, 100% (International Accounting Standards, p. 409). But it does not mean that we should not compare Estonian enterprises with each other. If the capital market will be established in Estonia, the relevance of comparative information for investors, creditors etc. is evident. Such information has to be based on international accounting concepts and principles. International accounting firms, particulary the representatives of " big six" — KPMG, Coopers & Lybrand, Arthur Andersen, Price Waterhouse a.o. — operating in Estonia build up an experience on international standards and how they are implemented in practice relatively quickly. As this experience is made available to their clients the speed of implementation will increase.

Accounting reform requires to pay more attention to the accounting terminology in Estonian, while it is connected with several substantial issues. For instance, among the accounting profession in Estonia it is not broadly used to distinguish two substantially different pair of terms — "revenues-expenses" ("tulud-kulud" in Estonian) from "receipts-disbursements" ("laekumised-väljamaksed" in Estonian).

The Statement of Cash Flow, which is not obligatory format of financial statement in Estonia, regarded to be imparative and implemented only by 9% of administrative staff in our firms. We have to take into consideration, that the firm's welfare depends on cash being and its efficient investments.

The particular financial results, expressed in financial statements will be formed in the process of sale and manufacturing particular production items. Consequently, the financial figures displayed in financial statements are shaped in the process of managerial accounting and based on achievement, degree of coordinating and reasonability of Budgets.

Typical questions needed to answer in firms are following:
- What sales volume is required to break even;
- What sales volume is necessary to earn a desired profit;
- What profit can be expected on a given sales volume;
- How would changes in selling price, costs, and output affect profits;
- How would a change in the mix of products sold affect the break-even and target income volume and profit potential;
- How to set up financial budget projects for credit application;
- How to allocate costs to business segments and products;
- Concentration of responsibilities and establishment of responsibility centers;
- Whether to produce a component part internally or to buy it from an outside supplier etc.

In the period of centrally planned economy cost or managerial accounting has not been treated as an independent branch of accounting but only as an integral part of unitary financial accounting. Therefore, it is difficult to speak yet about real management accounting in Estonia, although cost accounting and cost analysis were and are practiced extensively, but mostly by administrators and technocrats. Conceptual changes in this field are also mostly necessary. One of the central idea should sound like that: general overhead costs have to be treated as period costs, not as product cost. It is too broadly used a method in companies to include general overhead costs (administrators' wages, depreciation of buildings etc.) in product cost and to carry forward in the value of finished products, as well as of unfinished products. On the other side, the problem of objective allocating costs to various products, divisions, departments etc. becomes more

and more essential. In our questioning about 24% of administrators pointed out the cost allocation as the main problem-area, 19% saw the main problem in cost planning (budgeting) and analysis and 17% in drawing up and coordinating of operating and financial plans. Problematic areas mentioned above set up particular conceptual requirements on the accounting training and retraining organized for practioners. The main objectives of retraining process to be achieved are the following:

1. Systematics and comprehensivness of accounting education, as internal within the accounting concentration, as well as external connections with other concentrations (financial management, banking, marketing etc.);
2. Transition from stereotypes of central planned economy to the state of mind and skills used in market economy;
3. Connection with current situation in accounting environment and practical demand — to build the bridge from former accounting environment to new one;
4. Incorporation into the international accounting environment.

All these items have to be taken into consideration simultaneously.

As quickly and comprehensively the objectives mentioned above will be achieved as successfully a complex accounting system, involving as financial accounting as managerial accounting, in Estonian companies will be introduced. It requires a complex and systematical approach on top-management level. Unfortunately, we can meet a integral and entire approach to the organizational, managerial and also accounting structure (departementalization) relatively rarely. Only 7% of the firms, that have been taking part in our questioning, considered it to be imperative to redesign company's accounting system and 3% of staff reflected on problems of consolidated accounting.

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TRENDS IN THE EVOLUTION OF MANAGERIAL ACCOUNTING IN THE USA

Joseph A. McHugh

Financial Accounting is celebrating its 500th Anniversary this year. In fact the major celebration of Fra Luca Paciolo's treatise on the then current methods of bookkeeping was just celebrated by the European Accounting Association in Venice in April, 1994. So powerful was the double entry method of bookkeeping that the basic framework has remained intact. And, no clear distinction between financial and "managerial" accounting was necessary for almost 500 years, since the reports generated for owners of a business kept adequate score of the increase in capital, and inferentially on the effectiveness of operations. The provision of a balance sheet and an income statement was generally satisfactory from a financial management standpoint for most enterprises.

In many countries the rise of the corporation and other complex forms of business organization, with absentee ownership in the form of stockholders, and with a professional class of "managers", led to a dichotomy in the types of information needed. The same was true in non-capitalist countries, wherein a "fast" accounting system was required to assist operations managers.[1] In capitalist countries the typical financial statements providing information on stewardship, and the results of operations remained the primary financial reporting tools for external users. The groups of external users of these reports grew from just owners, (stockholders), to include government agencies, bankers, financial analysts who advised prospective stockholders, and to virtually anyone outside the company who had an interest in the financial condition of the company. In recent years the need for additional financial information led to the development of a third major financial report...the "Statement of Changes in Financial Position" or "The Funds Flow Statement". This statement provides an additional set of information for external users specifically designed to illustrate the financial impact of operations, financing and investment activities. These activities are described in terms of their impacts on

either the cash account or the broader term "funds", in the sense of "working capital".

As organizations grew in complexity, so, too, did the need for new types of information. To be sure, cost accounting systems had grown up as subsets of the financial accounting systems. But their origin, and in many instances their purposes even today, stemmed from the need to provide historical cost data reflecting product costs within the manufacturing environment.

But all of these financial reports were **historical**, in that they reflected transactions which had to have taken place before they could be recorded, classified, summarized, and reported. They did not and do not serve management's internal informational needs for planning and control. To make effective business decisions management needs business information which is primarily **future-oriented.**

The Need for Future-oriented Information

As management grew, so too, did the need for managerial information. Since Accounting Information Systems were primarily providing historical information, management information systems specialists sprang up. Accountants, recognizing the needs, developed a specialization called managerial accounting, or initially called "cost" accounting. Managerial Accounting evolved from the specialized cost accounting systems that served internal management's needs. But around 1929, around the time of the stock market crash in America, the emphasis shifted to "product costing, inventory valuation, and fair and proper financial statement presentation." [2]

Over the years cost accountants presented themselves as:
1) Scorekeepers, 2) Attention-directors, and 3) problem-solvers.[3] But because management's information needs were future-oriented for decision-making, the information provided by cost accountants was roundly criticized as: 1) untimely, 2) inaccurate, and 3) irrelevant. The production of cost data still primarily served the financial reporting needs, and not the internal needs of management for making decisions related to planning, operations, and control. As a result most accountants were not viewed as productive members of the management team. They were viewed primarily as "score-keepers", rather than as participants in the game. The scorekeeping function was

legitimized by the need for the numbers for financial statements, but the attention directing and problem-solving information did not meet the needs of the managerial customers for that information. The seriousness of these shortcomings was summed up by one of the pioneering co-authors of **Relevance Lost**, Dr. H. Thomas Johnson: "As Johnson states ... fixation on financial accounting, as the primary source of management accounting information, has kept managers, until recently, from attending to the ... demand of global competition."[4]

What are the Needs of Managerial Customers?

Burch provides a concise list of managerial needs for information:

Management must know what their products and services cost and must understand the underlying causes of costs, in order to perform the following functions:

- Develop Strategic Plans for the Enterprise.
- Translate those plans into budgets.
- Make day-to-day control decisions about operations.
- Evaluate how well operations were performed and continually strive to improve performance.
- Make an array of other special decisions for which financial accounting may be irrelevant and, in some cases, misleading.[5]

Two Emerging Solutions to America's Competitive Difficulties

Declining competitiveness in the world market, declining rates of productivity, declining customer satisfaction and declining quality of product became a major focus of management and accounting theorists during the middle eighties. While the trends had been in place for a number of years, sharp economic difficulties caused the nation, and its people to acknowledge their problems. The quality of the management decisions being made, and the information on which those decisions were based became major spheres of investigation.

Management Theory

Researchers in management and operational managers aggressively studied the planning and control tools and techniques which would enable the effective and efficient operation of enterprises. Studies of the Japanese successes revealed the facets of the philosophy which became known as Total Quality Management (TQM). Americans discovered that one of the major architects of the Japanese success and the guru of TQM was Dr. W. Edwards Deming, thought by many to be the "Father of world-class manufacturing".

Recognition of the need to survive in a highly competitive global marketplace brought about a focus on the "**world-class manufacturing environment**" (WCM). "The world-class manufacturing (WCM) environment is a culture of problem prevention, continuous improvement, efficiency and effectiveness, and manufacturing competitiveness." [6] Practicing continuous improvement is key to lowering costs, improving quality and increasing customer satisfaction. ... The seven trends in modern manufacturing environment are also the characteristics of WCM. They are:

- High quality. The product works as intended without defect or deficiencies.
- Customer service. Customer service factors are used to achieve complete customer service.
- Low inventory. Minimal amounts of inventory are ordered, processed, stored and handled.
- Flexibility. The manufacturing process can adapt quickly to changes in demand.
- Automation. Self-acting and self-regulating technologies are used to perform a large variety of tasks.
- Team concept. Workers and Managers work together in a cooperative manner for the overall success of the enterprise.
- Integrated computer-based information systems. A system in which various information technologies are used to connect all functions throughout the enterprise. [7]

Activity-based Costing

The thrust for a new accounting approach also began toward the middle of the 1980's when many practitioners were seeking ways of

countering the growing body of criticism described above. The criticisms centered on the inability of "traditional cost management systems to provide the financial information necessary to manage the transition to the factory of the future. Thus ABC was greeted with enthusiasm early on."[8] Accounting theorists reacting to the criticisms of cost accounting for the old environment developed a system which would respond to the information needs of managers in the world-class manufacturing environment. Their emphasis on knowing the **underlying causes** of costs has led to a major new thrust in cost and managerial accounting today, namely Activity-based Costing (ABC), and it has not stopped there.

Traditionally cost accounting systems accumulated the costs of direct materials, direct labor, and factory overhead, and then applied them to specific products. Furthermore the costs of goods manufactured were accumulated primarily on the basis of the resources expended on the manufacturing process. Any other costs were treated as selling, general or administrative costs associated with the time period in which they were incurred rather than as a product cost. Such an emphasis created a hierarchy of costs which were analyzed according to that hierarchy, rather than all costs receiving the same levels of scrutiny.

The typical bases for allocating overhead (indirect) manufacturing costs were: 1) Direct labor hours, 2) Direct labor dollars, 3) Machine hours, or 4) Materials dollars. All of these are volume related bases, and distributed the overhead costs on the basis of the number of hours or dollars of materials or hours required to produce a given number of finished units. Under the old manufacturing environment the inaccuracies inherent in using a few pools of overhead costs and volume related drivers could be accommodated. But no more! Costs in the modern manufacturing environment are more likely to be driven by diversity and complexity, rather than volume. Hence, the pressing need to identify the characteristics of the products, and the activities required to produce them. Obviously a more complex product with many specialized activities required to complete it will use more resources and incur more costs than a simplified product.

> Recognizing that several levels of costs exist, accumulating costs into related cost pools, and using multiple cost drivers to assign costs to products or services are the three fundamental components of **activity-based costing** (ABC). ABC is a cost

> accounting system that focuses on the various activities performed in an organization and collects costs on the basis of the underlying nature and extent of those activities. This costing method focuses on attaching costs to products and services based on the activities conducted to **produce, perform, distribute, or support those products and services.** (Emphasis added.) [9]

Three major points should be made here:

1) ABC is based on a fundamental analysis of the activities performed in an organization. This is similar, if not identical to, the types of process analyses being conducted by managers focusing on continuous improvement, re-engineering, and customer satisfaction.
2) The discussion has thus far zeroed-in on the manufacturing environment. The methodologies applicable to WCM and ABC are equally applicable to creating a **World-Class Service Environment (WCS).** They are useful in all kinds of service organizations, commercial and governmental.
3) The traditional methods of cost accumulation and cost allocation may still be suitable in non-complex, single product non-automated environments.

The common focus on analysis in WCM and ABC led naturally to the next step in the evolution, Activity-based Management or (ABM).

Acitivity-based Management

Activity-based Management melds the **process analyses** required for continuous improvement, operational control, and performance evaluation, with the **cost-based analyses** required for activity analyses and cost-driver analyses required for total cost management in the modern operational setting. The step came about with the recognition the even though activity-based costing provided better cost information, managers did not necessarily embrace this information and incorporate it into their cost management responsibilities.

Peter B. B. Turney proposes "Workforce Activity-Based Management" which he defines as "the process of using information to focus everyone on continuously improving profitability, timeliness,

and quality."[10] WABM, a variation of ABM, employs the concept of work teams

- groups of individuals who work together on a regular basis for the purpose of documenting, measuring, and improving their activities ... (it) integrates ABC into the world of work teams and Total Quality Management (TQM) and goes far beyond what either ABC or TQM can accomplish separately. ... The most important connector is money. With every single employee having bottom-line responsibility, knowledge of ways to improve financial performance, and reasons to do so, a company can't help but become more profitable.[11]

ABM is still in the evolutionary stage. Robert Kaplan, one of the major initiators of ABC, put forth a stirring defense of Activity-Based Cost Management. He says:

> Activity-based cost management is not an accounting exercise. An activity-based-cost model is a system designed to inform management about the economics of its past, current, and future operations. The word "cost" appears in the title to remind people that financial considerations are still relevant for management decisions and actions.[12]

Another article in the IMA Compendium reports on a study by Robin Cooper and Robert Kaplan, et al. of eight major organizations and their implementation of ABC. Their findings are summarized in the article "From ABC to ABM":

- Activity-based costing is more than a system. It is a management process.
- ABC Management benefits both strategic and operational decisions. Companies were using the information to make major decisions on product lines, market segments, and customer relationships, as well as to stimulate process improvements and activity management.
- An ABC model can coexist with traditional financial systems. Companies continued to operate their existing financial systems while developing and interpreting ABC models.

- ABC information, by itself, does not invoke actions and decisions leading to improved profits and operating performance. Management must institute a conscious process of organizational change and implementation if the organization is to receive benefits from the improved insights resulting from an ABC analysis. [13]

Implications for Estonian Development

Changes in the role of the management accountant are occurring very rapidly. These changes are in fact creating opportunities for such accountants to become more than the "scorekeepers" of old. They can assist management in linking financial and nonfinancial information so that effective strategic planning and performance evaluations can be made. The melding of cost and managerial analyses can provide great benefits to any enterprise, for-profit, not-for-profit, or governmental. The Cooper and Kaplan findings indicate that an ABC function can be appended onto the financial information systems. Thus, if Professor Eenthoven's assessments are correct, such functions are already a familiar part of the Estonian business approach. Therefore the cultural change required to adopt these philosophies should not be not be difficult.

Perhaps most important, Estonia need not grow through the painful evolution experienced by the United States in making managerial information effective.

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PERFORMANCE MEASUREMENT IN DECENTRALIZED ENTERPRISES

George A., Hachey Jr.

Performance Measurement

The performance measurement of Western business firms and divisions of these firms is undergoing a major change. This change is driven by the three pervasive influences on business activity in the 1990's, namely the globalization of markets, the spread of information technology and computers and the dismantling of organizational hierarchy. Internal corporate financial analysts must adjust their thinking and their techniques of evaluation to the new environment and to the more complicated ideas about what constitutes long term business success. This discussion is of special interest to business professionals in the transforming economies of Eastern Europe because the change in thinking required to emulate Western business practices from the old Soviet style could not be more radical.

The centralized production system of the former Soviet Union emphasized bigness and concentration. This led to the creation of huge enterprises that were vertically integrated to ensure sources of critical supplies. Performance measures to evaluate managerial success were focused on fulfilling quotas from the central plan drawn up by the various Ministries. The quality of the product was not an important concern. The system emphasized highly centralized decision making and resource allocation. [4, pp. 524] And in fact, these central features of the old Soviet system contained within them the seeds of the system's destruction.

The Soviet system of centralized economic planning was roundly criticized, internally as well as externally, for its poor economic performance in terms of efficient production and in terms of providing usable intermediate and end products to finished goods producing enterprises and consumers. Planners found it impossible to make all the major resource allocation and production decisions centrally. But

the emphasis on centralized decision making resulted in goods shortages and supply bottlenecks.

The old Soviet system tended to have ineffective production enterprises with insufficient incentives for response to consumer preferences and the continually changing demands of the market. Since market prices did not exist for the vast majority of goods and services, there were no reliable signals to producers about the type and nature of the products which consumers desired.

Now as these enterprises try to find their place in the global market economy, they find themselves competing with Western companies that emphasize precise measurement of product cost and corporate performance. The challenge facing the managers of Eastern European enterprises is daunting. This is exacerbated by the fact that the pace of change in the West is increasing at an ever faster rate.

Western business practices over the last two decades have been driven by several Japanese innovations in production organization and philosophy. These innovations have revolutionized Western cost accounting systems and approaches. These innovations have caused performance management measures to shift from overall and short-term financial measures such as earnings per share and return on investment (as deficient as these are anyway) to more operational measures which focus on immediately assessing how well the corporation satisfies customer requirements.

Total Quality Management

The old Western style of production management believed that defects were the fault of bad workers. [See 4, chapter 10]. Under this way of thinking, quality control involved inspecting output to uncover defective products and to have a field service organization to repair defective products that had been sold. This system emphasized production volume over quality. American industry was successful with this system through the 1970s because no one else emphasized quality either.

But this system had certain consequences which made American business firms easy prey for Japanese competition. One key result of the system was the accumulation of high levels of inventory at each

production stage to protect against shortages caused by uncertain quality from previous stages. Secondly, there were large costs associated with inspection, rejects, rework, scrap and warranty repairs. Furthermore, production schedules were frequently interrupted on the factory floor by parts and material shortages due to defective items. Large areas of factory floor space were dedicated to reworking defective products. And the cost accounting system built in these costs to the price of good items actually sold. These extra costs and inferior quality made American produced goods noncompetitive relative to Japanese produced goods

The driving force behind the success of Japanese and some West European firms was their adoption of total quality management production techniques which emphasized zero defect levels as a key target. This system required the development of new, nonfinancial measures of performance such as the defect rate, which is the ratio of defective items to total production. Japanese manufacturers realized that quality had to be designed into the process and this belief catapulted them to success in competition with other Western manufacturers.

To attain this zero defect rate, Japanese engineers designed products with fewer parts thus reducing the demands on each part to yield properly functioning product. They designed products that could be manufactured more easily, thus putting fewer demands for quality output on the corporation's fabrication and assembly processes. Thus, manufacturing considerations are an important part of new product design. Estimates were that 80% of all product defects were designed in and only 20% occurred in manufacture.

To cope with the new quality requirements requires extensive employee training to recognize and prevent defects. It also requires better equipment maintenance. Japanese manufacturers realized that they must operate machines well within accepted limits. Some machines perform quality checks themselves using computerized gauging devices.

Just-in-time Inventory Systems

Japanese manufacturers also imposed quality requirements on their suppliers. Manufacturers worked with their suppliers and insisted

upon zero defects. Deliveries can then enter the factory without inspection. Moreover, deliveries must be on time. These conditions were imposed to reduce the time delays that disrupt continuous work processing, this being the goal of the just-in-time inventory methodology. "If this goal is achieved, then throughput times will be minimized, inventory holding costs almost eliminated and large gains realized in productivity and quality" [4, pp. 412]. The savings from adopting the JIT manufacturing philosophy are due to reduced inventory holding costs and reductions in needed floor space, thus reducing the size of manufacturing facilities. But more important savings and improvements occur when management remedies situations that were covered up by excessive inventory holdings. These include quality problems, bottlenecks, coordination problems, inadequate documentation and supplier unreliability. As a consequence of adopting the JIT philosophy companies reduced material losses and increased overall factory productivity [4, p. 417].

In general, the key result of adopting the total quality management and just-in-time inventory philosophies is that managers "strive to be competitive by achieving a continuous and rapid flow of value-adding work from product design to final customer payment. To achieve continuous and rapid flow of value-adding activity means eliminating anything that causes delay, unevenness, or excess in the flow of value adding work. Sources of delay ... include lengthy machine setups, unscheduled maintenance, defective work, defective parts and performance measures that encourage overproduction and cause wasteful activities such as moving, storing, inspecting, waiting, scheduling and expediting" [3, p. 65].

Traditional Performance Measures

Traditional measures of corporate and divisional performance are financial measures. The nature of these performance measures are reviewed below.

Performance Measurement of a Profit Center

A profit center is a decentralized division in which the manager has the authority to make decisions on sources of supply and choice of markets. A profit center should be selling a majority of its output to

outside customers and should be free to choose the sources of supply for a majority of its materials, goods and services. It is an appropriate structure for evaluating managerial performance if the quantity of plant and equipment is stable from year to year or is not controllable by the profit center manager. If the level of investment is controllable by the profit center manager, then the unit is an investment center.

The key consideration in evaluating the performance of a profit center is determining those revenues and expenses that the profit center manager can control. This measure is typically called controllable contribution. Controllable contribution represents total division revenues less all costs that are directly traceable to the division and controllable by the division manager. Includes fixed costs that may arise from the use of indirect labor, indirect materials, and utilities. This is the best measure of a manager's performance because it measures the manager's ability to use effectively the resources under his control and authority.

It is sometimes difficult to distinguish between controllable and noncontrollable fixed costs. Depreciation, insurance and property taxes on fixed assets would be controllable if the manager has the authority to dispose of these assets but would be noncontrollable if he doesn't have this discretion.

Note that division performance can be affected by market conditions beyond the manager's control. Good performance can result from excellent market opportunities but weak managerial performance. Alternatively, weak performance can result from terrible market conditions but excellent managerial performance. Thus, an analyst must measure performance relative to the potential of the division, perhaps through the annual budget for the division. Problem is that the manager usually participates in the budget setting process and may misrepresent potential opportunities and lower performance expectations.

This measure is sometimes alleged to have one serious shortcoming in that it measures performance without costs that have been committed by other managers. By ignoring attributable, but noncontrollable fixed costs, controllable contribution provides an incomplete picture of the division's economic contribution to the organization. Advocates of this approach argue for the use of divisional profit before taxes as an appropriate basis for performance evaluation. This measure includes

allocation of all central general and administrative expenses to division. By bring held accountable for this level of aggregation, the company sends a message to its managers that the company as a whole is not profitable unless divisions generate enough revenue to cover corporate costs. Still, it is usually felt that divisional profit before taxes is not useful for managerial performance evaluation because it includes costs not controllable at the divisional level and because the basis for allocating these costs is usually arbitrary and unrelated to how divisional activities influence the level of corporate expenses.

Performance Measurement of an Investment Center

An investment center is a decentralized division for which the manager has been given maximum discretion for making short-run operating decisions on product mix, pricing, and production methods as well as the level and type of assets to be used. It represents an extension of the profit center in that profit performance must be measured relative to an investment base. This relation means that profits are measured relative to the assets that are employed to generate the profits. Since capital has other uses, management needs to determine if allocation is appropriate given the return it can generate.

Two measures have traditionally been used to evaluate investment centers. These are return on Investment (ROI) and residual income (RI). These are defined as:

$$\text{ROI} = \frac{\text{Controllable Income}}{\text{Controllable Assets}}$$

Decomposition of ROI

$$\text{ROI} = \text{Investment turnover} \times \text{Earnings ratio}$$

$$\text{Investment Turnover} = \frac{\text{Controllable Revenues}}{\text{Controllable Assets}}$$

$$\text{Earnings Ratio} = \frac{\text{Controllable Income}}{\text{Controllable Revenues}}$$

Residual Income (RI)

RI = Controllable Income – (Controllable Assets x Company's required rate of return)

More Recent Developments in Performance Measurement

It has long been recognized in the managerial accounting and finance literature that what you measure is what you get. In other words, the measurement system that a company uses to evaluate performance affects the behavior of managers and employers. In this regard, traditional performance measures have certain deficiencies. Financial measures tell results of actions already taken. They have a backward looking focus and as such are not capable of reflecting contemporary value creating actions. They also focus on cash flow rather than on the activities that lead to cash flow.

Two different approaches have been developed to offset the problems with traditional measures of performance. The first is based on financial market prices for a firm's equity and is most commonly named "shareholder value analysis". Modern portfolio theory and efficient market theory suggest that a company's stock price is the clearest measure of market expectations about its performance. Financial economists thus conclude that management should not be evaluated by accounting information per se, but by how financial markets evaluate that information and other information about the company. The second focuses on internal operational measures of the firm such as customer satisfaction, internal processes at which the company must excel, and the organization's innovation and improvement activities as drivers of future financial performance. This approach represents a shift in managerial thinking from treating financial figures as the foundation for performance measurement to treating them as one among a broader set of measures [2, p. 131]. I will refer to this as the "balanced scorecard approach".

The tenets of shareholder value analysis correspond to financial theory. Basically, financial asset value is viewed as the discounted present value of expected future cash flows that accrue to the owner of the asset. These cash flows are evaluated with a risk adjusted discount rate. If a corporate decision will enhance any of these variables, it will

add to the value of the company's equity and should be implemented. However, there are some problems with this approach. Most notably, it leads management to make decisions which will enhance short term financial results. "Ask almost any senior manager and you will hear about some company's failure to make capital investments or pursue long-term strategic objectives that would imperil quarterly earnings targets" [2, p. 132]. The criticisms of shareholder value analysis suggest that financial markets are myopic rather than truly efficient; that they tend to overlook the strategies and activities that will result in long term financial success. [In this regard see 1, 7 and 8]. Although these criticisms are subject to dispute [see, for example 9 and 10] they have been important in calling into question an overreliance on short term financial results as measures of long term success.

Kaplan's balanced scorecard approach [6] focuses on operational factors of success and then examines if the successful implementation of these factors can result in long term financial success. The complexity of today's business requires that such operational factors be constantly monitored. Kaplan regards such factors as fundamentally affecting the performance of certain companies. These operational factors are drivers of future performance and are related to such important success factors as customer satisfaction, maintaining important internal competencies and the organization's ability to innovate and learn how to perform its activities more effectively. These factors must be measurable.

Kaplan enumerates four perspectives that are the key components of his "balanced scorecard".

1. How do customers regard the company — customer perspective.
2. At what activity must the company excel — internal perspective.
3. Can the firm continue to improve and create value — innovation and learning perspective.
4. How do shareholders regard the company — financial perspective.

These perspectives bring together many items that should be on a firm's competitive agenda:

becoming customer oriented
shortening response time
improving quality
emphasizing teamwork
reducing new product launch time
managing for the long term

A brief description of each perspective follows:

The customer perspective involves those activities that create value for the customer. It can be measured by the following indicators:

Lead time from product order to delivery.

Lead time to get product from definition stage to market.

Defect level as measured by customers.

On-time delivery measures.

The internal business perspective focuses the firm on the activities at which it must excel to satisfy customer needs. Excellent customer performance comes from processes, decisions and actions that occur throughout an organization. The focus should be on those processes that have the greatest impact on customer satisfaction. These are factors that affect:

cycle time
quality
employee skills
productivity

In this perspective, the firm identifies its core competencies — the critical technologies needed to ensure continued market leadership. It specifies measures for these core competencies to evaluate performance. There is a significant information system requirement in this. Managers need timely information on these activities and the ability to disaggregate the data base to identify trouble spots.

Kaplan's third perspective involves innovation and internal learning. Can the company continue to create value? Global competition and other factors mean that targets for success keep changing. Only through the ability to launch new products, create more value for

customers, and improve operating efficiencies continually can a company penetrate new markets and increase revenues and margins — in short, grow and thereby increase shareholder value. One key performance measure for this perspective is the percent of sales from new products.

The final perspective involves finance. How does the firm look to shareholders? Do the firm's strategies, their implementation and execution result in bottom line improvement?

Improved operational performance pays off only when it results in improved sales or reduced operating expenses or higher asset turnover. Thus, management must be able to forecast how operating improvements lead to financial improvements. It explores the firm's linkages between operating performance and financial performance? Some argue that if you improve operating performance, financial performance will follow. But Kaplan has written several cases that show a firm can fail to convert improved operational performance into improved financial performance.

Conclusions

This paper has reviewed recent developments in performance measurement for American corporations and divisions of these corporations. The current thinking is that both operating and financial performance measures must be tracked in order for the firm to compete effectively in the global market place. Financial measures include financial statement and stock price results. Estonian companies should be able to usefully employ the emerging Western practice of tracking operational performance measures and trying to continually improve on the prior year's performance. This reduces their reliance on accounting and stock market results. This is important since accounting practices are just now developing and are not widely understood and because a liquid, efficient stock market is not yet functioning. By focusing on operating measures as suggested in Kaplan's "Balanced Scorecard" and other articles from the new managerial accounting literature, Estonian managers can usefully gauge their performance and the ability of their enterprises to compete against Western companies.

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BANKING AND MONETARY POLICY

Siim Kallas

The main aim of the monetary policy carried out by Eesti Pank has been and is to create a stable financial environment as well as increasing the trustworthiness towards the financial system. The latter has been seriously damaged during the hyper inflation and banking crisis.

No essential changes were introduced in the monetary policy carried out by Eesti Pank in 1993. In order to achieve the stated aims, it was decided to continue to proceed within the framework of the currency board that was established by the Monetary Reform of 1992. The exchange rate of the Estonian kroon maintained its peg to the German mark and the money supply was limited by the growth of the foreign exchange reserves of Eesti Pank. Other factors influencing the money market (e.g., interest rates, credit volumes to banks and foreign currency flows) were left to be determined by the market. Eesti Pank took an active part only in solving the banking crisis.

Foreign Exchange Regulations in Estonia

The first means to regulate this area were taken at the end of 1991 already when a few norm establishing documents were adopted liberalising the purchase and sale of foreign currency as well as the licensing of banks was started. The main legislative acts, namely the Foreign Currency Statutes, were adopted together with other legislation connected with the monetary reform. These Statutes included regulations applied to foreign assets and foreign operations carried out by legal entities and single individuals. The Statutes was the first attempt in 65 years to regulate this area in Estonia. Today it can be said that the principles adopted by the Statutes have proved to be successful. Although it included a few strict limitations (e.g., responsibility to re-patriate foreign earnings and obligatory surrender of foreign currency), they at the same time allowed the foreign currency to be purchased and sold freely as well as to use it for import transactions.

The first steps in liberalization process were taken already in October 1992. Since then, the restrictions on opening and using foreign currency accounts both abroad and with Estonian commercial banks have been removed. Eesti Pank has ceased to issue licences for those activities but has retained the right to be informed about foreign operations and payments made from and to those accounts that is necessary for compiling the balance of payments. The procedure of selling and purchasing foreign currency was also liberalized, the banks were finally allowed to freely sell and purchase non-convertible foreign currency which up to then was prohibited. The repatriation obligation on earned foreign currency was abolished. By the end of 1993 a draft law for cancelling the Foreign Currency Law which was adopted as one of the basic reform documents and which is still in force today, has been prepared and approved by the Board of Eesti Pank.

Development of the Banking System

The post-reform period in the banking system of Estonia was lacking confidence and contradictory data did not make it easy to interpret. The general situation in banking became more uncertain. The blocked assets in Moscow had already damaged the balance of two bigger commercial banks. A number of customers were having serious liquidity problems, due to which the banks lost large amounts of money. Bad loan portfolios started to affect the banks and together with the monetary reform, the possibility to earn well from exchanging the rubles was not there anymore. Also, some banks were not able to adjust themselves to the foreign exchange system that was in effect after the reform. All the above reasons caused payment difficulties for a number of banks, which in turn affected the credibility of those banks. Simultaneously with the increased payment difficulties, some of the banks had an adequate credit resource which can be proved by the amounts deposited with the central bank at that time. Although interest was not paid on those amounts, the banks also did not increase crediting activities but rather invested the money.

The last years have been full of changes in the banking system of Estonia. As one of the factors that helped to increase the confidence,

the resolute action of Eesti Pank as the central bank in re-structuring and regulating the system should be mentioned.

By 31 December 1992 Eesti Pank had registered 42 commercial banks with the total share capital of 218 million kroons. This number of commercial banks was definitely too large for Estonia: it was difficult to form adequate share capital, not to mention the reserve capital and deposits. All those banks were located in 17 different places, with more than 100 affiliates in 50 smaller or bigger centres. The majority were located in Tallinn, the capital of Estonia: 20 banks and 17 affiliates. This description does not include Hoiupank (the Savings Bank) and its affiliates that would add to the above number more than 600 units.

The legitimacy of the operations and the proper services to the customers were to be guaranteed by the obligation set up to the banks to comply with the requirements for obtaining the licence and economic norms. To ensure the competence of managing the banks, the licence committee examined also the qualification of the candidates to the top management of banks. However, the main emphasis in this kind of supervision was left to the Banking Supervision, a department of Eesti Pank. In case all those preventive measures had been taken, a banking crisis should never have happened in Estonia. However, not enough exactness and sense of responsibility as well as the lack of external control lead some commercial banks off-handily to lending out large amounts and to spend money unnecessarily. As the Moscow Foreign Economic Bank blocked nearly 80 million USD for political reasons and as some loans that were not sufficiently guaranteed were not paid back or were overdue, a number of banks were in insurmountable payment difficulties at the end of 1992. Estonia faced a serious banking crisis.

On the basis of the inspection results, moratorium was declared to the Union Bank of the Baltics, North Estonian Bank Ltd. and Tartu Commercial Bank on 18 November 1992. The first two banks were merged, the latter liquidated. This was the first step made by Eesti Pank in reorganising and recapitalizing Estonian banking system. Within this period, a number of banks have been reorganised or a process of liquidation was initiated. In 1993 two more banks were liquidated: Revalia Pank and Narva Commercial Bank. A number of procedures are still in progress, but one can say that the banks who have survived are operating on a remarkably higher level than a year

ago. The warning example of other banks has definitely played its role here.

Also international auditing companies like BDA/Deloitte & Touche, KPMG "Estonia" and Price Waterhouse have helped in supervising the activities of Estonian commercial banks. The factors that have hindered making the supervising process more effective have been the lack of unified accounting standards and a plan of accounts, as well as the lack of the manual for fulfilling accounting reports. Nevertheless, steps have been taken in this area, with the aim of not restoring the regulations in full according to the western standards but rather creating a general framework for the regulations.

Better and more objective information on the activities of banks can now be obtained because on 1 January 1993 a new procedure for reporting was established by Eesti Pank. Thus, there are now better opportunities for credible statistical data that enables us to analyse the changes and assess the situation.

Besides that, Eesti Pank elaborated also a control system for foreign exchange operations with the aim of avoiding and dispersing the foreign exchange risk taken by banks. Mention should be made of the credibility ratios on bank's solvency, liquidity and risk concentration. All the above regulating norm-establishing acts conform to the EC standards.

According to the decision made by the Board of Eesti Pank, all the licences issued to commercial banks had to be renewed during January 1993. The commercial banks who hoped to retain their licences had to increase their share capital to at least 6 million kroons as well as have sound accounting procedures and comply with the norms established by Eesti Pank. The result was that the licences of 8 banks were not renewed and the banks in question had to carry out the liquidation procedure according to their statutes. They also had to terminate all banking operations they were engaged in. As of today, there are 21 operating banks in Estonia. Their share capital was 371 million kroons on 30 November 1993, having increased 1.7 times within 11 months.

This was not the end of the restructuring process. In spring 1993 a transformation period was declared up to the end of the year. During that period new banks were not licensed which was supposed to stabilise the banking market and give the already existing banks a

possibility to improve their economic and technological basis. Starting from 1994 the share capital of a new bank has to be at least 15 million kroons, the already existing banks have to reach that capital level by 1 April 1995. As one of the aims of Estonia is to integrate into Europe again, it is natural that the minimum capital will be further increased up to the amount in force in Europe, i.e., 5 million EQU (approximately 75 million kroons).

Taking into consideration the experience gained in countries with more developed banking systems and accounting for the lessons learned during the moratorium processes in Estonia, a legal basis was formed for founding loan and savings cooperatives. The first 2 cooperatives have been given a licence. This possibility hopefully will ease the problem of small banks lacking sufficient capital.

The development of the banking legislation has been noteworthy. On 18 May 1993 the Law on the Central Bank of the Republic of Estonia was passed and the new Credit Institutions Law is soon to substitute the still in force Banking Law. This would end the second stage in the restructuring process of the banking system.

ESTONIAN ECONOMY
Present Situation and Perspectives

Mart Sõrg

Introduction

Estonia is one the three independent Baltic States, annexed by the Soviet Union in 1940 under the provision of the infamous Molotov-Ribbentrop Pact. With the help of deportation of great number of "nationalistic" elements to Siberia and bringing in migrants, mainly of Russian origin, this occupation was attempted to eternalize. In 1934 the Estonians made 97,7% of the population in Estonia, in 1945 even 97,3%, as the German people left for Germany in 1939 and in 1945 some frontier villages, populated mainly by Russian people were annexed with Russian Federation. In 1990 Estonians made only 62% of the population and the percentage of Russian people increased up to 30%. The second means of making this occupation everlasting was to bind the Estonian economy so tightly with the economy of the U.S.S.R., that separating them would be impossible. In addition to nationalization the private property, the Baltic States were changed into the countries whose market regions were in the East. Even in 1991 export to the former Soviet regions made 94 % from the total export and import from there was 86% from the total.

The collapse of the socialist system and the USSR, made it possible for Estonia to gain its independence on Aug. 20, 1991. Both, the deterioration of the Soviet economy and transition from planning economy to market one had negative influence on the Estonian economy. Recession started already in 1990, when Estonian real GDP fell by 3,6%. The decrease accelerated to 12,6% in 1991 as difficulties in maintaining the system of trade and distribution within the Soviet Union grew increasingly acute. In 1992, Estonia also experienced an exacerbation of the slump with the decrease in industrial production of 39% and in agriculture of 21%.

However some tendencies of stabilization of Estonian economy have already been noticed. The inflation in Estonia was over 1000% in 1992, in 1993 it will be ap. 30%. The industrial productive capacity gained the level of the same period of the previous year already in the 4th guarter of this year. Export and import are increasing and the level of unemlpoyment has become stable and is under 2% of the population.

The aim of this report is to give a survey of the present situation in Estonian economy, to find causes of the processes and shifts and to forecast the perspectives for the nearest future.

Estonian Economy in 1993

Gradual stabilization is characteristic to the Estonian economy in 1993. The gross domestic product (GDP) in comparable prices was the lowest in the Ilguarter of 1993, since then it has come down several times. Hereafter the GDP has already increased. According to the forecasts, the GDP in 1993 will remain ap. 5% smaller than it was last year.

Industry gives about a quarter of the GDP. The industrial production in 1993 will be a quarter smaller than last year. Great resetructurings have taken place in industry. Light industry, paper and cellulose industry, and also mechanical engineering and metallurgic industry have suffered great losses, the decrease of the productive capacity in 1993 is two times when compared with the last year. The producers of the refreshing drinks, means of transport and repairer shops, publishing industry and fishing industry have increased their production.

The decline of agriculture has been fast in 1993. Earlier Estonian agriculture produced milk and meat on the basis of imported fodder grain, more than it needed and so mainly for eastern market. At present the productive capacity has decreased, making only 12% from the GDP, but it is still more than Estonia needs and so, it is attempted to be exported to the Western countries. It was planned to liguidate all big socialist collective farms at the beginning of 1993. This reform has not been finished yet, partly because of the problems of ownership and difficulties in writing off the debts.

Because of the decline in economy and high prices of fuel the transport capacity of transport has decreased, especially in the field of

motor — and railway transport. Naval transport has decreased only a little. The transport to the other countries makes 90% of its turnover. The passengers conveyance capacity has also increased, as there are more long-distance buses to the western countries and because of the high variety of service offerings to the tourists.

The privatization process has almost broken up large trading organizations into small enterprises. The number of the registered small trading enterprises is already 20000 in Estonia. The competition has become rather intense in trading and the first commercial networks have been formed. The fact that the number of wholesalers increased very quickly in 1993 (over two times) is especially characteristic to the situation in trading.

The labour market of Estonia became stable at the second half of 1993, at the level 2% of unemployment. Many enterprises are not willing to discharge their workers because of the potential of increasing their produkctive capacity in the future. The average wage in Estonia that was 1200 EEK at the end of 1993 was ap. 40% of the level of 1989, when we compare the purchasing power. Differentatiation between poor and wealthy people is continuing.

Estonian foreign trade has developed successfully. The export and import of Estonian goods increased in 1993 when compared with 1992 over two times (in current prices). The balance of foreign trade (including the balance of services) and the current accounts of the balance of payments were almost balanced. The former Soviet Union made 25% of the foreign trade capacity. Finland holds the leading position among trade partners. The role of the other Scandinavian countries and Germany has also increased.

37% of the value of the GDP was redistributed with the help of state budget. The Estonian state budget in 1993 was balanced and there was even some above-plan income. The maximum rate of income tax for enterprises was 35% and for private persons 33%, the turnover tax was 18% for all.

The inflation was not higher than 4% in a month and the inflation rate for the year was about 70%. The exchange for the Estonian kroon versus German mark has remained the same 1 DEM=8 EEK. The Bank of Estonia has succeeded in guaranteeing the free exchange for EEK into foreign currencies. The amount of cash in circulation and also its reserve have also increased almost 2 times in 1993.

Meanwhile the value of foreign currencies and gold reserve is two times higher than the value of cash in circulation.

At the beginning of 1993 the Bank of Estonia revoked the licenses of several small banks because they could not meet their equity requirements. As the result of that, the difficulties in circulation of accounts are lost and the confidence in banking system has increased. Although the real interest is negative, the deposits of the people have increased almost two times in 1993. The interest on the loans have become smaller than the speed of inflation. Estonia has got ap. 2.2 billion EEK from abroad, as loans and 3/4 of them have been given in order we could balance our budget and market.

The Reasons for the Changes

There are several different reasons for the economic decline in Estonia and they are similar to those in East-European countries. It is rather surprising that we have passed the period of unstability quicker than many other countries. An opinion poll held by the East European Investment Magazine in the spring of 1993 among potential Western investors shows that Estonia is ranked seventh out of 27 ETs, gaining 23 votes. It is forecasted that the GDP in Central/Eastern Europe (Poland, Hungary, Czeck Republic, Slovakia) will decrease in 1994 by 2%, the IMF experts think that in Estonia it increases by 6 %.

There are several objective reasons for that. One of them is the fact that Estonia is a small country — 42 000 sq.km. and 1,6 million people, that is why the structures are not so complicated and the contact between leaders and people is more direct. The influence of foreign assistance (equal by its nominal value) is greater to the Estonian economy than to the economy of a large state. On the other hand, the small homemarket makes the enterpreneurs to orientate their production to foreign market in order to keep their equipment and labour forces working.

Estonia is rather poor by its natural resources and that is why we have the attitude that only the high quality of work and quick reaction to the changes enables us to be successful. We have experienced the rightness of this attitude during the last period of independence, the Estonian economy was able to compete with the neighbouring countries then. The Estonian location between East and West is also

favourable. We have already learnt to use our location, the structure of the foreign trade (transit trade makes a great part of it) and successes in the field of naval transport and tourism have proved it.

One of the fundamental cause of our success is good preparatory work. Already in September 1987, four scientists made a proposal of gaining economic independence in Estonia. This proposal was a basis for discussion and the problems of transition from command economy to a market one were investigated by the scientists and politicians in the research groups, formed by the government and the results and discussions were also published in the press. So, our people were theoretically and psychologically prepared for the changes. It is also important that one of the authors of this proposal was Edgar Savisaar, the later prime minister, the other was Siim Kallas, who is the president of the Bank of Estonia now and two others were the members of the Parliament (Riigikogu) and each of them could take part in carrying out their ideas.

The fact that the three last governments (Ed. Savisaar, T. Vähi, M. Laar) have been orientated to the West has also been favourable. The rightness of our orientation has been confirmed in our contacts with Russia, the Russian side has not fulfilled its commitments, has not paid its payments, has set high custom taxes and barriers and trade boycotts. The present right government with its prime minister Mart Laar who entered service in October 1992, has been orientated towards open market economy and has also tried to avoid all kinds of custom barriers and quotas and has not given subsidies and monopoly to anybody in order not to distorte the natural competition.

The formation of the class of private proprietors with the help of foreign investments and pritavization process, has also been a basis for a success. The productive capacity of the stateowned enterprises makes only less then 50% of the total. There are over 5000 enterprises that base entirely or partly on the foreign capital and they produce over 10% of the production.

Perstectives

The forecasts of Estonian and foreign experts say that in 1994 the preconditions for economic boom and motivation for increasing the investments should be developed. It is said that the GDP should

increase by 5–6%. The experts have not noticed the causes for unbalance of the state budget. That is why the Parliament (Riigikogu) dared to decrease the maximum rate of income taxes to 26%. The experts are sure that it is possiple to preserve the free exchange of EEK and the interest rate on the loans decreases. The experts are convinced that the inflation will decrease further on (25% in 1994) and the role of former SU republics in our wages and the real consumer's capacity chould increase.

Despite these optimistic prognosis, we might compare the situation in Estonia with reaching the unsound ice where everybody should act very carefully in order not to fall in the water. There are several dangers from inside and outside. The outside dangers come from the East and West. Dangers from the East are connected with economic and political instability, as the people who are not Estonians make up 40% of Estonian population and 25% from total foreign trade is connected with East. In addition to that, our location at a boundary makes the potential investors to hesitate, as long as the Russian troops are located in Estonia and the accusations in oppressing the human rights of Russian people in Estonia are heard from the East.

The dangers from the West might originate from the would-be custom barriers, introduced in the book called "The Myth of Free Trade", by US professor Ravi Batra. These barriers try to hinter that the goods from the countries of lower stage of development will enter the market of well-developed countries.

It has been a success to carry out the ideology of free trade without great social convulsions in Estonia. The prognosis have shown that the continuation of that development will lead to the greater unemployment and forming the social classes who differ from each other by their wealth. Some prices are already at the level of world prices, but the wages make only 10–30% from the average of western neighbours.

If the people come to the streets or the lefts win the next Parliament elections, they might put an end the reforms. So our task is to choose the right speed for the development in order the reforms could not be turned. It is also necessary to deal not only with general politics but with regional one, as for example, the levels of unemployment and delinquency are higher in some regions than in the others.

It is also important task to build a strong state in Estonia. There are problems with corruption and delinguency. Because of the weakness of the governmental power, very many important decisions are not carried out. In order to change this situation we need people, money and credible information.

Conclusion

Estonian economy has stabilized at a level than it was earlier. It has happened without greater social convulsions, as we consider the difficulties to be the price for our independence. All the indicators show that we have reached the bottom of economic crises already and from there the upswing should start. But the success might be temporary and without making the governmental power stronger and without good social and economic politics, the continuation of the success is not guaranteed. It is also important that the international situation would be favourable. Our knowledge about the dangers and firm conviction that our return to the old system would be entirely without any perspective, serves as the basis for our optimism.

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PORTFOLIO DIVERSIFICATION WITH SOVEREIGN DEBT AND PRIVATE EQUITY: EVIDENCE FROM THE EMERGING MARKETS[1]

Mark Stone
Jahangir Sultan

Abstract

This study incorporates emerging markets sovereign debt and private equity into the construction of international portfolios. An inclusion of these two sets of securities is worthwhile because, while both private equity and sovereign debt may be sensitive to worldwide and country-specific economic shocks, the sovereign debt may offer superior portfolio diversification since debt payments streams, and market values may be more prone to country-specific political shocks. Empirical evidence suggests that an internationally diversified portfolio with both private equity and sovereign debt outperforms an alternative portfolio with only private equities. These results demonstrate that despite their common link to their home country, there are significant diversification benefits from combining both emerging markets' sovereign debt and private equity.

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1 The views expressed in this paper are the authors' own and do not necessarily represent those of the IMF. We thank the World Bank for data on emerging markets. Data on the secondary market prices of sovereign debt are provided by Salomon Brothers and ANZ. Many thanks to James Zeitler for his helpful suggestions. Comments are welcome. Not for quotation without permission.

Portfolio Diversification with Sovereign Debt and Private Equity: Evidence from the Emerging Markets

Introduction

The objective of this paper is to demonstrate the efficiency of constructing an internationally diversified portfolio using emerging markets' (EM) assets. Unlike previous studies (for example, see Harvey, 1993), we include two types of assets from the emerging markets: private equity and sovereign debt. Emerging market investible private equities[2] are issued by firms that foreign investors can purchase. International portfolio managers have traditionally included EM equities along with country funds and other international stocks/bonds to enhance portfolio performance. In contrast, sovereign debt is a dollar denominated security that trades on the secondary market in New York. These are mostly third-world loan portfolios that are being sold by major banks. Since 1985, demand for these assets has increased because these debts can be purchased for portfolio investment reasons, and large multinational firms have utilized them for conducting debt-equity swaps with the emerging countries.[3] Despite their popularity, only scant attention has been placed on the performance of these debts in a portfolio.

We believe that this paper is the first to measure the efficiency of international diversification by including both emerging markets' sovereign debt and private equity. Using the Markowitz criteria for finding a minimum variance portfolio, we show that substantial benefits can be derived by investing in sovereign debt and EM equity. Of course, the potential usefulness of these results needs to be verified

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2 Not all emerging markets stocks are available to an international investor. The IFC has constructed an index based on all restrictions that are currently in place. This index is based on stocks that are free from national restrictions. See IFC (1993).

3 Among the fixed income asset class, Brady Bonds (long dated sovereign debt bonds issued by developing countries after their structural reforms have been approved by the IMF and other lending agencies) are popular for international diversification. Structural reforms undertaken by countries must include improving tax collection, inflation control, and reducing budget deficits. Currently, the size of the Brady Bond market is approximately $95 billiob. See Financial Times, April 11, 1994, for a survey.

by including EM assets into an international portfolio. That would highlight the importance of EM assets in further improving the diversification benefits to an international investor.

Several policy implications may be inferred from the results. First, the inclusion of sovereign debt into an international portfolio should not be limited only to large banks and multinational companies. Based on our results, large institutional investors should be able to include these assets into their portfolios to enhance diversification benefits. As the underlying economies strengthen, returns from sovereign debt should rise, and since these debts are denominated in the US dollar, foreign exchange risk should not be an issue. Second, as institutional investors become familiar with sovereign debts, trading activity in this market should rise, leading to an improvement in the liquidity. Third, increased popularity of sovereign debts may also spill over to other assets linked to the emerging markets, leading to an increase in investment capital in emerging markets. Overall, an improvement in the financial sector in emerging markets may also increase the foreign exchange reserves of governments and thus lessen the need for debt service rescheduling agreements with the international lending agencies.

The remainder of the paper is as follows. Section II briefly discusses the existing literature. Section III reports the results from Markowitz minimum-variance portfolio optimization model. Section IV concludes the paper.

The Review of the Literature

It is commonly agreed that international portfolio diversification enhances portfolio risk and return performance (see for example, Adler and Dumas (1983), Bailey and Lim (1992), Divecha, Drach, and Stefek (1992), Harvey (1993), Tesar and Werner (1993), and Wilcox (1992)). A typical asset pricing model estimates the following regression:

$$R_{jt} = \alpha + \beta(R_m - R_f) + \varepsilon \qquad (1)$$

where R_{jt} is the return from holding a particular asset, R_f is the risk-free rate, R_m is the return on the market portfolio, and β is the asset's

covariance with the market index. For pricing international stocks, the preceding one factor capital asset pricing model may be replaced with a two-factor model such as:

$$R_{jt} = \alpha + \beta_{jm}(R_m - R_f) + \beta_{jw}(R_w - R_f) + \varepsilon \qquad (2)$$

which also includes the word stock index (R_w). Several versions of this model have been used by researchers to study the extent to which capital markets are segmented from the rest of the world or to study the impact of barriers to capital flows (See Stulz (1981), Eun and Janakiramanan (1986), Errunza and Losq (1985), and Hietala (1989)).

The recent popularity of emerging markets' equities for international diversification may be linked to the increasing pace of financial market liberalization in emerging markets. The World Bank defines an emerging market as a developing country with less than $8,00 per capita income but making substantial progress towards political and economic reforms (IFC, 1993). The current capitalization of the emerging markets is almost $1 trillion and is expected to grow larger (Feldman and Kumar, 1994). As emerging markets become more deregulated, the level of foreign participation in these markets is expected to rise, leading to further improvement in economic growth and quality of living.

The general consensus among investors is that emerging markets have relatively low number of issues and the volume of trading is low. Brokerage commissions and other transaction costs on equities trading and custodial services in emerging markets are relatively higher than the US. Also, the extent of government supervision and regulation of securities trading may be lower than the US, and enforcement of these rules to punish insider trading violations and securities fraud is often difficult because of lack of information and the existing legal system. All these imply a higher price volatility and reduced liquidity of portfolio investments using emerging markets assets.[4]

With respect to the emerging markets equities, several issues are currently under investigation. These issues range from identifying the appropriate capital asset pricing model to quantifying the benefits from portfolio diversification with EM equities (see Feldman and

[4] See IFC (1993).

Kumar, 1994 for a survey). For instance, Harvey (1993) and Bekaert (1993) look at the predictability of stock returns from the EM countries and De Santis (1993) study the potential benefits from holding EM assets in a portfolio. Kim and Singal (1993) examines the impact of financial liberalization programs on capital flows and volatility of stock returns.

Sovereign debt obligations, on the other hand, are not as popular as the emerging market equitis for several reasons. First, the market is thinly traded and the currency denomination amount of these debts is large. Second, because the underlying economies for these debts may have been volatile due to economic and political uncertainty, many view these debts be risky (see Financial Times, April 11, 1994). Despite these shortcomings, sovereign debts are increasingly being sought by investors looking for highly leveraged exposure to emerging markets. In particular, several investment companies are marketing derivatives on sovereign debt by issuing options and warrants. Although these warrants and options do not have a long history to determine how they will perform in near future, their popularity among investors is expected to rise as emerging markets continue experience economic growth.

The extant literature fails to include both emerging market debts and equities in studies of potential diversification benefits.[5] Such an analysis of these two types of assets is important for several reasons. First, while both private equity and sovereign debt many respond to worldwide and country-specific economic shocks, New York based sovereign debt may offer further diversification benefits since traders of sovereign debts may be more sensitive to contry-specific political shocks.[6] Furthermore, sovereign debt may also be sensitive to US-specific shocks because traders are mostly US investment banks. Second, both assets may be correlated with global market returns, thus limiting the potential diversification benefits. Finally, combining both types of assets from the same country may be contrary to the notion of

5 Only exception is a study by Stone (1991) which looks at the sensitivity of sovereign debt returns to macroeconomic fundamentals. See references therein for examples of other studies.

6 Although Brady Bonds have performed well in terms of their acceptability, recently these bonds have lost nearly 28% of their value due to political uncertainty in Mexico (see Heard on the Street, Wall Street Journal, April 8, 1994).

portfolio diversification. Yet, empirical evidence suggests that an internationally diversified portfolio with both private equity and sovereign debt outperforms an alternative portfolio with only EM equity. The reason is that despite their common link to their home country, the correlation between emerging markets' sovereign debt and private equities is low.

In the next section, we demonstrate the gain in efficiency from including both sovereign debt and private equity into construction of international portfolios. It is important to recognize that this study does not include many other assets that may increase portfolio performance. Our objective is to show that emerging markets' debt and equity can be included in a portfolio without limiting the diversification benefits.

Data

Monthly stock returns data on 8 emerging markets (Argentina, Brazil, Chile, Colombia, Mexico, Nigeria, Philippines, and Venezuela) are obtained from the International Finance Corporation's (IFC) Emerging Markets Data Base (EMDB). The time period covered in this study is January 1986 to August 1993. Monthly returns are based on the IFC's Investible Index (both local currency and dollar term), which includes stocks that are free of restrictions. Sovereign debt prices during the same period for these countries are obtained from Salomon Brothers and ANZ. Monthly S & P 500 returns are used as a proxy for a diversified U.S. equities portfolio. The risk-free return is the interest rate on 1-year U.S. Treasury Bills. The Financial Times Word Index (dollar term) is obtained from the Lehman Brothers (New York). The World Index, which is constructed jointly by the Financial Times, Goldman Sachs & Co., and County NatWest/Wood Mackenzie in collaboration with the Institute of Actuaries, includes roughly 2200 stocks from 24 countries and 11 regions. For example, on April 8, 1994, there are 520 stocks from the United States, 205 from United Kingdom, 106, from Canada, 32 from Denmark, 22 from Finland, 98 from Malaysia, 44 from Singapore, and 42 from Spain, to name a few (see Financial Times, April 8, 1994).

Table 1. Performance Measures (Dollar Currency Returns) (January 1986–August 1993)

Country	Mean Returns	Standard Deviation	World Market Beta	Sharpe	Treynor
Arg_s	1.87	24.38	–0.33	0.06	–4.47
Arg_d	–0.07	9.53	0.42	–0.05	–1.08
Bra_s	0.05	21.89	0.75	–0.02	–0.45
Bra_d	–0.64	9.09	–0.03	–0.11	32.60
Chi_s	2.75	8.14	0.20	0.29	11.62
Chi_d	0.36	3.03	0.06	–0.01	–0.44
Col_s	2.72	8.7	0.11	0.27	21.73
Col_d	0.07	6.15	0.07	–0.05	–4.22
Mex_s	2.97	15.48	1.00	0.17	2.57
Mex_d	0.22	5.08	–0.04	–0.03	4.71
Nig_s	–1.25	14.32	0.27	–0.11	–5.97
Nig_d	–0.46	6.31	0.10	–0.13	–8.11
Phi_s	2.93	10.92	0.78	0.23	3.27
Phi_d	0.09	6.06	0.20	–0.05	–1.43
US_s	0.83	4.91	0.73	0.09	0.62
Ven_s	1.99	12.61	–0.21	0.13	–7.66
Ven_d	–0.2	6.03	0.08	–0.1	–7.62
W_s	0.89	4.82			

Note: Subscript_d (_s) indicates returns on sovereign debt (private equity). Sharpe performance measure is obtained using the Financial Times World Index. The risk free rate is the rate on 1-year US Treasury Bill. Arg (Argentina), Bra (Brazil), Chi (Chile), Col (Colombia), Mex (Mexico), Nig (Nigeria), Phi (Philippnes), US (S&P500), Ven (Venezuela), and W (World Index). The month risk–free rate is .3852054%.

Table 2. Correlation Coefficient (Dollar Currency Returns) (January 1986–August 1993)

	Arg_d	Bra_d	Chi_d	Col_d	Mex_d	Nig_d	Phi_d	Ven_d	Arg_s	Bra_s	Chi_s	Col_s	Mex_s	Nig_s	Phi_s	Ven_s	US_s
Bra_d	0.4																
Chi_d	0.23	0.34															
Col_d	0.07	0.21	0.16														
Mex_d	0.35	0.55	0.43	0.1													
Nig_d	0.14	0.27	0.35	0.06	0.35												
Phi_d	0.23	0.25	0.28	0.07	0.45	0.1											
Ven_d	0.43	0.5	0.58	0.29	0.75	0.37	0.45										
Arg_s	-0.02	0.01	0.03	0.07	0.07	0.19	-0.01	0.16									
Bra_s	0.16	0.24	-0.07	-0.04	0.1	0.06	0.03	-0.01	-0.11								
Chi_s	-0.07	0.05	-0.07	0.03	-0.17	0.05	0.09	-0.1	0.05	0.14							
Col_s	-0.05	-0.13	-0.14	-0.14	-0.09	-0.08	-0.01	-0.12	-0.06	0.09	0.05						
Mex_s	-0.13	-0.14	-0.03	0.05	-0.08	-0.12	0.16	-0.05	0.13	-0.02	0.34	0.02					
Nig_s	0.08	0.05	0.04	0.1	0.1	0.19	0.08	0.26	0.07	-0.06	-0.05	0.1	-0.09				
Phi_s	0.06	0.08	0.2	0.11	0.12	-0.04	0.36	0.17	-0.09	0.12	0.18	0.16	0.08	0.03			
Ven_s	0.18	-0.13	0.1	-0.11	0.09	0.08	-0.12	0.18	0.09	-0.22	-0.18	0.17	-0.1	0.16	-0.13		
US_s	0.12	0.04	0.19	0.1	0.03	0.06	0.2	0.09	0.09	0.12	0.31	0.11	0.48	0	0.29	-0.05	
W_s	0.21	-0.02	0.09	0.06	-0.03	0.08	0.16	0.06	-0.07	0.16	0.12	0.06	0.31	0.09	0.34	-0.08	0.71

Note: Subscript_d (_s) indicates returns on sovereign debt (private equity). Countries are abbreviated as follows: Arg (Argentina), Bra (Brazil), Chi (Chile), Col (Colombia), Mex (Mexico), Nig (Nigeria), Phi (Philippines), US (S&P500), Ven (Venezuela) and W (World Stock Index).

Descriptive statistics are reported in Tables 1 and 2. In Table 1, dollar denominated returns[7] are reported. Local currency denominated returns are converted into dollar returns in the following way:

$$R_j = [(1+i^*)(1+\%E)]-1 \tag{3}$$

and the variance of return:

$$\sigma_j^2 = \sigma^2([(1+i^*)(1+\%E)]-1) \tag{4}$$

$$\sigma_j^2 = \sigma^2(i^*) + \sigma^2(\%E) + 2\,COV(i^*,\%E) \tag{5}$$

where i* is the foreign currency denominated stock returns (including both capital gains and dividend yield) and % E is the rate of appreciation/depreciation of the foreign currency in terms of the US dollar. Note that the subscript _d (_s) indicates returns on sovereign debt (private equity). With respect to sovereign debt (denominated in dollar terms), the highest monthly return (.36%) is noticed for Chile, followed by Mexico (.22%). The lowest monthly return (−.64%) is recorded for Brazil. In terms of the volatility of sovereign debt returns, Argentina is most volatile (9.53% standard deviation), while Chile is least volatile (3.03% standard deviation). With respect to equity returns, Mexico is ranked the highest (2.97%), in contrast, Nigeria has the worst performance (−1.25%). In terms of the volatility of stock returns, Argentina is the most volatile market (24.38% standard deviation), followed by Brazil (21.89%), Mexico (15.48%), and then Nigeria (14.32%). During this period, the return from the benchmark World Stock Index (Financial Times World Stock Index) turned out to be .89% (4.82% standard deviation). Compared to it, the

[7] Although not reported here to conserve space, local currency denominated equity returns during this period are remarkably large. The highest monthly stock return is noticed for Brazil (17.36%), followed by Argentina (12.35%). The lowest stock return is recorded for Nigeria (2.32%). The results also show that emerging markets returns are quite volatile. For Argentina, Brazil, Mexico, Philippines, and Venezuela, the standard deviation of stock returns exceeds 10%. Complete results are aviable upon request.

S&P500 generated less than 1% return per month with a 4.91% standard deviation of return.[8]

Table 1 also reports several measures of performance. These include the systematic risk (β) of each asset with respect to the World Stock Index returns, the Sharpe ratio, and the Treynor ratio. To obtain the world β, returns from each assets are regressed on the monthly returns from the World Index. Within the equity category, the highest β is noticed for Mexico (1.00) and the lowest β is obtained for Venezuela (−.33).[9] For sovereign debt, the highest β is noticed for Philippines (.42) and the lowest is recorded for Mexico. Compared to that, the β for the S & P500 is .86, which is slightly lower than the β for the Philippines.

The Sharpe ratio is defined as $(R-rf)/\sigma$. It is a measure of excess returns for a given level of risk. According to this ratio, the Chilean stock market is ranked first, followed by Colombia, Philippines, and Mexico. In contrast, the Sharpe ratio is negative for sovereign debt returns for all EM countries in the sample. The Sharpe ratio for the return on the S & P500 is among the lowest in Table 1. The Treynor ratio is slightly different from the Sharpe ratio. This ratio is defined as $(R-rf)/\beta$. The highest Treynor ratio is noticed for Brazil (debt) and the lowest ratio is noticed for Nigeria (debt).

Of particular importance to this paper is the relative volatility of the EM equity and debt returns. It seems that in general, debt returns are less volatile than EM equity returns. It is unclear as to how much of this reflects the fact that traders in the secondary market for debt are relatively experienced investment banks in relatively liquid markets, whereas EM equity investors are generally less experienced traders in relatively unregulated markets in more volatile economies. Results presented in Table 1 clearly indicate that compared to EM equities, sovereign debt risk is lower. This lower volatility of debt returns could

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[8] The dollar denominated stock returns are substantially lower than the local currency returns (see footnote 4), suggesting a substantial amount of foreign exchange risk in these returns. For example, compared to a 12.35% monthly stock return in local currency, the dollar denominated equity return for Argentina is only 1.87%. This implies that Argentina experienced almost 10% monthly devaluation during this period.

[9] The high β for Mexico may be consistent with Mexico's importance in the global economy due to its large economy and the recent North American Free Trade Agreement.

be consistent with the hypothesis that market participants assign a lower probability of bankruptcy to EM countries experiencing balance of payments difficulties. In other words, the fact that these countries may be able to seek debt relief from the world financial community to service their foreign debt acts as a ressuring measure to traders in the secondary market for LDC debt. In contrast, EM equities are traded in relatively unregulated markets where rules pertaining to disclosure and insider trading are not fully developed and enforced. Furthermore, since firms lack the mandate and clout to collect taxes and seek debt relief from the IMF, the World Bank, and multinational banks, market participants consider EM equities to be riskier than EM debt.

Table 2 reports correlation between dollar denominated returns. Several important features are worth noting. First, the following countries' debt returns are highly correlated: Brazil and Mexico (.55), Chile and Mexico (.43), Mexico and Philippines (.45), Argentina and Venezuela (.43), Chile and Venezzuela (.58), Mexico and Venezuela (.75), and Philippines and Venezuela (.45). The remaining pairs of sovereign debt returns have low correlations. Second, the correlation between country-specific debt and equity returns are generally speaking low. In several cases, country-specific sovereign debt and equity returns are negatively correlated: Argentina (−.02), Chile (−.07), Colombia (−.14), and Mexico (−.08). For the remaining countries, sovereign debt and equity returns are positive but lower than.3. Third, the pairwise correlations between EM equity returns are also quite low. The following pairs of countries are negatively correlated: Argentina and Brazil (−.11), Argentina and Colombia (−.06), Argentina and Philippine (−.09), Brazil and Mexico (−.02), Brazil and Nigeria (−.06), Brazil and Venezuela (−.22), Chile and Nigeria (−.05), Chile and Venezuela (−.18), Mexico and Nigeria (−.09), Mexico and Venezuela (−.10), and Philippines and Venezuela (−.13). The remaining correlations are positive, but are less than .4.

Overall, EM equity returns have low correlations among themselves and correlations between several paris of countries (for example, Argentina and Brazil) are negative. Furthermore, correlations between EM equity and EM debt are also quite low. Combined, these stylized facts imply that EM equities and debt would provide substantial diversification benefits to international investors.

Table 3. Markowitz Minimum Variance Portfolio Weights (Emerging Equity and S&P500) (Dollar Returns) (January 1986–August 1993)

Portfolio Mean Returns and Standard Deviation of Returns										
Portfolio	Global MVP	Portfolio 1	Portfolio 2	Portfolio 3	Portfolio 4	Portfolio 5	Portfolio 6	Portfolio 7	Portfolio 8	Portfolio 9
Exp. Ret %	1.4143	1.5872	1.76	1.9329	2.1057	2.2786	2.4514	2.6243	2.7971	2.97
Port. S.D.	3.8917	3.9152	3.9848	4.0981	4.2546	4.4567	4.6967	4.9698	5.7707	15.4798
Porfolio Weights										
Arg_s	1.2808	1.5156	1.7505	1.9854	2.2012	2.3311	2.4894	2.6482	0	0
Bra_s	2.1594	1.7325	1.3055	0.8786	0.3773	0.0071	0	0	0	0
Chi_s	14.3984	17.1691	19.9397	22.7104	25.9801	28.6813	31.327	33.9716	33.4542	0
Col_s	11.5753	13.4925	15.4097	17.3269	19.3853	21.3214	23.1933	25.0638	32.3031	0
Mex_s	0	0	0	0	0.1439	1.5889	3.1535	4.7204	9.7009	99.9989
Nig_s	5.5188	3.9038	2.2888	0.6738	0	0	0	0	0	0
Phi_s	3.8812	5.613	7.3449	9.0767	11.0713	13.1062	15.1737	17.2419	23.6187	0.0011
Ven_s	10.8559	11.5185	12.1811	12.8436	13.3639	13.9241	14.6202	15.319	0.9232	0
US_s	50.3301	45.055	39.7798	34.5047	27.4771	19.0398	10.043	1.0351	0	0

Table 4. Markowitz Minimum Variance Portfolio Weights (Sovereign Debt and S&P500) (Dollar Returns) (January 1986–August 1993)

Portfolio	Global MVP	Portfolio 1	Portfolio 2	Portfolio 3	Portfolio 4	Portfolio 5	Portfolio 6	Portfolio 7	Portfolio 8	Portfolio 9
					Portfolio Mean Returns and Standard Deviation of Returns					
Exp. Ret %	0.36	0.41	0.47	0.52	0.57	0.62	0.67	0.73	0.78	0.83
Port. S.D.	2.62	2.63	2.68	2.81	3.00	3.27	3.61	4.01	4.44	4.91
					Porfolio Weights					
Arg_d	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bra_d	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chi_d	55.04	57.09	56.75	55.12	52.34	44.24	33.18	22.12	11.06	0.00
Col_d	11.16	9.88	6.88	2.91	0.00	0.00	0.00	0.00	0.00	0.00
Mex_d	4.19	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phi_d	4.20	2.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ven_d	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
US_s	18.98	22.36	29.02	36.94	45.38	55.76	66.82	77.88	88.94	100.00

Table 5. Markowitz Minimum Variance Portfolio Weights (Emerging Equity and S&P500) (Dollar Returns) (January 1986–August 1993)

	Portfolio Mean Returns and Standard Deviation of Returns									
Portfolio	Global MVP	Portfolio 1	Portfolio 2	Portfolio 3	Portfolio 4	Portfolio 5	Portfolio 6	Portfolio 7	Portfolio 8	Portfolio 9
Exp. Ret %	0.78	1.02	1.27	1.51	1.75	2.00	2.24	2.48	2.73	2.97
Port. S.D.	2.30	2.37	2.57	2.87	3.25	3.68	4.15	4.66	5.30	15.48
	Porfolio Weights									
Arg_d	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bra_d	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chi_d	48.88	46.49	42.37	36.27	29.46	22.66	14.45	5.46	0.00	0.00
Col_d	10.79	9.23	7.46	5.34	3.07	0.80	0.00	0.00	0.00	0.00
Mex_d	6.89	8.58	7.97	7.12	5.97	4.82	3.42	1.89	0.00	0.00
Nig_d	1.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phi_d	2.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ven_d	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Arg_s	0.21	0.45	0.73	1.01	1.32	1.63	1.91	2.19	0.53	0.00
Bra_s	0.95	0.56	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chi_s	8.05	12.62	16.16	19.45	22.62	25.80	28.96	32.11	34.19	0.00
Col_s	9.09	12.22	14.49	16.50	18.41	20.32	22.30	24.31	28.84	0.00
Mex_s	0.00	0.83	1.88	2.56	3.14	3.72	4.29	4.85	7.53	100.00
Nig_s	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phi_s	0.00	0.00	2.50	5.15	7.82	10.48	13.19	15.93	20.56	0.00
Ven_s	2.82	3.82	5.14	6.59	8.19	9.78	11.48	13.25	8.35	0.00
US_s	7.86	5.21	1.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 6. Sharpe Performance Measure of Optimum Portfolios

Portfolio	Global MVP	Portfolio 1	Portfolio 2	Portfolio 3	Portfolio 4	Portfolio 5	Portfolio 6	Portfolio 7	Portfolio 8	Portfolio 9
Panel A: EM Equity and S&P500 Only Portfolios										
Exp. Ret %	0.78	1.02	1.27	1.51	1.75	2.00	2.24	2.48	2.73	2.97
Port. S.D.	2.30	2.37	2.57	2.87	3.25	3.68	4.15	4.66	5.30	15.48
Sharpe	0.26	0.31	0.35	0.38	0.40	0.42	0.44	0.45	0.42	0.17
Panel B: Sovereign Debt and S&P500 Only Portfolios										
Exp. Ret %	0.36	0.41	0.47	0.52	0.57	0.62	0.67	0.73	0.78	0.83
Port. S.D.	2.62	2.63	2.68	2.81	3.00	3.27	3.61	4.01	4.44	4.91
Sharpe	-0.01	0.01	0.03	0.05	0.06	0.07	0.08	0.09	0.09	0.09
Panel C: Sovereign Debt, EM Equity and S&P500 Only Portfolios										
Exp. Ret %	0.78	1.02	1.27	1.51	1.75	2.00	2.24	2.48	2.73	2.97
Port. S.D.	2.30	2.37	2.57	2.87	3.25	3.68	4.15	4.66	5.30	15.48
Sharpe	0.17	0.27	0.34	0.39	0.42	0.44	0.45	0.45	0.44	0.17

Note: Portfolio weights are obtained from Tables 3, 4 and 5.

To formally examine the benefits of diversification, we use the Markowitz minimum variance portfolio model. The expected return from the portfolio is:

$$E(r_p) = \sum_{i=1}^{n} w_i E(r_i) \tag{6}$$

where w_i are weights assigned to individual assets in the portfolio. The variance of the portfolio return is:

$$\sigma^2(r_p) = \sum_{i=1}^{n} \sum_{j=1}^{n} w_i w_j \sigma_{ij} \tag{7}$$

with the restriction that the weights sum to 1. The Lagrangian function to me maximized is:

$$z = \theta E(r_p) - \sigma^2(r_p) + \lambda(1 - \sum w_i) \tag{8}$$

where θ is the risk aversion parameter and is assumed to be constant. Taking the partial derivatives of z with respect to the weights and the λ, and by setting them to zero, leads to solutions to the system of simultaneous equations (see Francis and Archer, 1971). Several portfolios are constructed to provide separate evaluation of the optimal weights. A separate evaluation of portfolios of emerging equity and sovereign debt would test the hypothesis that sovereign risk for LDCs is less highly correlated then equity risk. Since sovereign risk is more country-specific, adding EM debt into a portfolio would provide diversification benefits.

In Table 3, minimum variance weights for portfolios (with a short sell restriction) with the S & P500 and EM equity (dollar terms) are presented. The global minimum-variance portfolio (MVP) return is 1.4143%, with a 3.89% standard deviation of return. The benchmark portfolio (S & P500) generated a return of .83% with 4.91% standard deviation, implying that our EM equity portfolio provides significant reduction in the variance as well as improving the ex post returns. The EM equity only portfolio has 50% weight in the S & P500 and the remaining weights are distributed across EM equities. These weights are, for example, 14.39% (Chile), 11.57% (Colombia), and 10.86% (Venezuela). Table 3 also lists several other portfolios appropriate for

varying degrees of tolerance to risk and returns. For example, if an investor wanted to generate 2.28% monthly return with a 4.46% standard deviation (Portfolio #5), then he would assign 28.68% weight to Chile and 21.32% to Colombia. The weight assigned to the S & P500 in this portfolio is 19%.

Table 4 presents the optimal weights for a portfolio with EM sovereign debt and the S & P500. The global minimum-variance-portfolio yields .36% monthly return with a standard deviation of 2.61%. Compared to the US benchmark portfolio, while the portfolio return is lower than the S & P500 return (.83%), the standard deviation is also lower than the standard deviation of the S & P500 return (4.91%). The global MVP would include the following EM sovereign debts: Chile (55.04%), Columbia (11.16%), Mexico (6.42%), Nigeria (4.19%), Philippines (4.02%), and the S & P500 (18.98%).

Table 5 presents the final portfolios constructed by including both sovereign debt and EM equity, along with the benchmark S & P500. The results suggest that there is a substantial decline (statistically) in the standard deviation of this portfolio compared to the previous portfolios. The ex post return from holding the global MVP is .78%, which is less than the S & P500 return and the return from a portfolio composed of EM equity and the S & P500. However,compared to both the EM equity only portfolio and S & P500 only portfolio, the standard deviation of return (2.3%) is significantly smaller. The weights (%) assigned to individual assets are as follows: Arg_d (0), Bra_d (0), Chi_d (48.88), Col_d (10.79), Mex_d (6.89), Nig_d (1.36), Phi_d (2.49), Ven_d (0), Arg_s (0.21), Bra_s (0.95), Chi_s (8.05), Col_s (9.09), Mex_s (0), Nig_s (0.61), Phi_s (0), Ven_s (2.82), and US_s (7.86). The highest weight is assigned to Chilean debt which is not surprising since return from holding this asset has the lowest standard deviation (see Table 1). Also, the assets receiving zero weights have large standard deviations of returns on equity and sovereign debt. Overall, our analysis shows that a minimum variance portfolio composed of the S & P500, emerging market equity, and sovereign debt outperforms alternative portfolios.

Table 6 presents Sharpe ratios for various efficient portfolios with varying levels of risk tolerance. Portfolios listed in Panel A include two assets: EM equity and the S & P500. The highest Sharpe ratio (.45) is noticed in the case of portfolio #7 (see Table 3 for the

weights), which yields 2.62% monthly return (4.97% standard deviation). Compared to it, the S & P500 generated .83% monthly return (4.91% standard deviation). In Panel B, various portfolios are listed (see Table 4 for optimal weights) that include two assets: EM sovereign debt and the S & P500. The Sharpe ratios are much smaller than those reported in Panel A. The highest Sharpe ratio (.09) is noticed for the portfolio #7, which generated .73% monthly return (4.01% standard deviation). While this performance is very similar to the performance of the S & P500, it falls short of the performance of a portfolio with EM equities and S & P500. Finally, Panel C presents Sharpe ratios for portfolios (see Table 5 for optimal weights) that include EM equities, EM sovereign debt, and the S & P500. The highest Sharpe ratio is noticed for the portfolio #7 which generated 2.48% monthly return (4.66% standard deviation). Compared to the portfolio #7 in Panel A, the monthly return is slightly smaller but the standard deviation is also smaller. Theharpe ratio is the same.

Conclusions

The objective of this study is to incorporate both sovereign debt and private equity from emerging markets for constructing internationally diversified portfolios. This analysis is important because while both private equity and sovereign debt are sensitive to world and country-specific economic shocks, New York based sovereign debt prices may offer superior diversification benefits because sovereign debt traders may also respond to country-specific political shocks. Empirical evidence presented in this paper suggests that the correlation between sovereign debt and equity is very low, and as a result, can lead to potentially large diversification benefits. Future research may also study the evolution of the covariance matrix among these assets over time and examine how country-specific shocks can affect the relationship among these assets. Yet another interesting approach would be to examine a portfolio including sovereign debt from both EM and developed countries to see which one countributes most to portfolio performance. Since sovereign risk is more country-specific, an interesting issue would be to see if this portfolio outperforms a portfolio with only equities.

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DEMAND FOR CASH AND OTHER PAYMENT MEDIA IN FINLAND

Matti Viren

Indroduction

This paper summarizes some main findings from a recent Finnish studies which have dealt with the change of the payment system over time and with the demand of different payment media, particularly notes and coin, in Finland.

The demand for notes an coin is, of course, very important from the central bank's point of view. One obvious reason for this importance is the seigniorage revenue which is created by the currency in circulation. In Finland, currency is used very little while bank and postal giro transfer and debit and credit cards are used considerably more than on an average in OECD countries. In fact, the currency/GDP ratio is one of the lowest in the world as can be see from Table 1. Low currency ratio, in turn, implies a low level of seigniorage revenue and that is, of course, an unpleasent thing for the central bank. If the revenue is already small, it is quite obvious that the central bank is interested in the future developments in the use currency. If the use of currency is going to diminish to an insignificant level due to the increased use of other payment media, particularly due to the use of different payment cards the central bank has to look for other sources of revenue. The use currency may diminish not only because of "traditional payment cards" but also new electronic (smart) cards may also crowd out notes and coin.

Of course, seigniorage is not the reason why central banks are interested in the development of payment media. Typically all central banks, including the Bank of Finland, are responsible on the stability and efficiency of the payment systems. In the future, along with the development of more and more sophisticated payment technology, this respons ibility may become more important and actual problems may become more frequent.

My paper makes use of a recent survey study of Finnish households concerning the demand for cash and the use of different payment media. The demand for cash study provides information of the cross-section determinants of currency demand. Thus, the importance of income, age, labor force status, geographical area and so on can be found out. The study shows that there are considerable returns to scale is currency demand and that cash holdings clearly increase along with age. Gender, education and geographical area, in turn, are not very important demand determinants.

An analysis of the use of different payment media shows that cash is the most widely used means of payment in Finland. About 40 per cent of all payments is carried out by cash. A little less is done by bank or postal giro transfers. The shares of banks' debit cards and credit cards are about the same, somewhat less than ten per cent. The role of cash is much more important in terms of the volume (number) of transactions. More 80 per cent of all transactions is carried out by cash. Obviously, this indicates that the cash is used mainly in small transactions and the number of small transactions obviously exceeds the number of large transactions.

Personal characteristics affect the choice of payment media. Table 2 contains some sample average values for the shares of the payment media. The numbers in this table can be interpreted very easily. Thus, it can be said that the use of cash increases with age, there is only a small difference between genders, retired people use much cash than people who are in the lobour force and, finally, people with high expenditure use less cash — in relative terms, of course. Actually, cash holdings increase along with the value of payments. It is interesting to notice that the use debit and credit cards is not very much dependent on age. In fact, the same is true with the labour force participation status. Thus, the difference between retired and active people is almost negligible. This suggests that there may not be important future cohort effects in the use of debit and credit cards.

Perhaps the most interesting results of the survey concern the relationship between the size of payment and the choice of the payment media (cf. Table 3). It is found out that there are a lot a small transactions which constitute a major part of the number of transactions but which represent only a tiny share of the total value of transactions. Obviously, the opposite holds for large transactions. Thus, payments exceeding 500 markkas make less than 5 per cent of

the total number of transactions. Small transactions are made almost exclusively by cash. In fact, cash is the most frequently used means of payment also for medium size payments. Only after payments exceed 500 markkas, bank and postal giro transfers start to dominate the payment system.

Cheques are not used households' everyday transactions in Finland. The sample contains only a few cheque payments: on an average an individual makes one cheque payment once in two years!

On the basis of the respective size of payment one may guess that the payments have to do with purchasing of houses or some expensive consumer durables. Finally, as the debit and credit card transactions are concerned, one can see that cards are mainly used in medium-size transactions (100–500 markkas). Slightly more than one quarter of (the value of) payments of this size is made by cards which is already a relatively high number.

All in all, we can conclude that notes and coin have a quite welldefined role in transactions (made by households) which is very different from other payment media. The use of cash clearly dominates small transactions and it is hard to see that an essential change could take place in this respect. Only the electronic ("smart") cards might do that, at least in terms of coin.

Table 1. Some International Comparisons of Payment Systems in 1990

	ATMs per capita	Share of card payments %	Currency/ GDP, %	Seigniorage/ GDP, %
Belgium	.09	11	6.7	.61
Denmark	.20	14	2.8	.51
Finland	.57	14	2.8	.20
France	.26	15	4.1	.52
Germany	.18	1	6.4	.81
Italy	.17	3	4.8	1.07
Japan	.72	22	10.0	.61
Netherlands	.18	2	7.5	.68
Norway	.41	7	5.0	.60
Spain	.36	9	8.4	2.59
Sweden	.23	17	4.6	.81
Switzerland	.33	6	8.1	...
UK	.30	14	2.9	.41
United States	.37	15	4.5	.49
Unweighted average	.31	11	5.6	.76

ATMs per capita denotes the number of automated teller machines (ATM) and cash dispensers per 1000 inhabitants while the share of card payments denotes the value share of debit and credit card payments in all payments (exluding cash payments). Sources: Payment Systems in Eleven Developed Countries (BIS), 1991; Payment Systems in EC Member States (Committee of Governors of the Central Banks of the Member States of the European Community; prepared by an *ad hos* Working Group on EC Payments systems), 1992; The Finnish Bankers' Association and the author's calculations. The seigniorage estimates are annual averages for 1988–1991. The estimates have been derived using the so-called opportunity cost definition of seigniorage (see, eg. Gros, 1989).

Table 2. Value Shares of Different Payment Media for Different Sosioeconomic Groups, %

	Cash	Debit cards	Credit cards	Other	Cheques	Trans-fers
Age						
Below 25	50.8	11.4	5.2	0.6	0.0	32.3
25–30	29.1	7.5	3.8	0.6	0.0	59.0
31–35	42.1	10.2	10.1	0.2	0.0	37.4
36–40	44.7	8.3	8.4	0.4	0.0	38.3
41–45	30.4	5.6	4.8	0.2	27.0	32.0
46–50	41.6	7.6	7.4	0.7	0.1	42.7
51–55	54.2	4.1	7.1	0.8	0.1	33.8
56–60	47.2	7.5	8.8	0.1	0.0	36.4
61–65	55.3	13.2	4.4	1.1	0.0	26.0
over 65	60.4	3.8	6.7	0.8	2.0	26.3
fermale	38.9	6.3	5.6	0.5	13.5	35.3
male	42.5	8.5	7.7	0.2	1.2	39.9
in labour force	38.0	6.8	6.4	0.4	10.1	38.4
retired	56.4	8.2	7.3	0.7	0.8	26.6
expenditure over median	33.6	6.5	6.7	0.3	11.4	41.6
expenditure below median	62.2	9.0	5.8	0.7	0.1	22.2
whole sample	40.6	7.1	6.5	0.4	8.6	36.8

Owing to rounding the rows do not always add up to 100.

Table 3. Value and Volume Shares of Different Payment Media for Payments of Different Size, Per Cent

	Cash	Debit cards	Credit cards	Other	Cheques	Transfers	All
Value shares, %							
Below FIM 30[1]	8.8	0.2	0.0	5.6	0.0	0.1	3.6
FIM 31–100	24.8	9.5	6.1	33.3	0.1	1.2	11.7
FIM 101–500	40.3	58.1	54.6	61.1	0.6	13.3	29.2
FIM 501–	26.1	32.2	39.2	0.0	99.3	85.3	55.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Below FIM 30[2]	97.4	0.3	0.1	0.7	0.0	1.5	100.0
FIM 31–100	85.8	5.7	3.4	1.3	0.1	3.8	100.0
FIM 101–500	55.8	14.0	12.1	0.9	0.2	16.9	100.0
FIM 501–	19.0	4.1	4.6	0.0	15.3	57.0	100.0
Total	40.6	7.1	6.5	0.4	8.6	36.8	100.0
Volume shares, %							
Below FIM 30[1]	48.0	1.6	0.5	20.7	0.0	6.0	40.4
FIM 31–100	33.8	29.4	22.7	55.6	25.0	15.1	32.0
FIM 101–500	16.7	62.0	67.5	23.7	45.8	40.6	22.9
FIM 501–	1.6	6.7	9.3	0.0	29.2	38.3	4.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Below FIM 30[2]	98.2	0.2	0.1	0.5	0.0	1.0	100.0
FIM 31–100	87.3	4.8	2.9	1.7	0.1	3.2	100.0
FIM 101–500	60.4	14.3	12.0	1.0	0.1	12.2	100.0
FIM 501–	27.7	7.8	8.0	0.0	0.5	55.9	100.0
Total	82.8	5.2	4.1	1.0	0.1	6.8	100.0
Memoran-dum items:							
average payment (FIM)	80.3	222.6	262.8	70.9	19648	865.8	168.6
number of payments	48.5	3.1	2.4	0.6	0.05	4.1	58.9

The definitions of payment media are the same as in Table 1. Average payment denotes the average payment (in FIM) for an individual. Number of payments denotes the number of payments by an individual during the 32-day survey period. FIM 30 is used as a benchmark because it is the lowest payment which can be made by debit cards. Owing to rounding the columns and rows do not always add up to 100.

[1] Columns add up to 100
[2] Rows ad up to 100.

THE POSSIBILITIES OF ORGANIZING THE AUDIT IN ESTONIA

Kaido Kallas

Audit services can be judged as a service in a market setting where market forces primarily govern the demand and supply of auditing. A common example of such market are the countries with developed market economy. In those countries relatively few companies have mandatory audit requirements. The shares of those companies are sold on the stock exchange, therefore the demand for audit services stems from demands from companies and the users of financial statements. Such a market view for auditing services is uncommon in Estonia, where in the conditions of central-planned economy the enterprises were led by legislative actions of regulatory bodies. From these rises the differing of Estonian auditing practice, where recently was instituted formal demands to financial statement audits.

The objective of auditing is that the auditor shall express his opinion on the annual report and on the administration of the company in his audit report.

The first stage of hte examination is planning. Preparatory information is gathered, such as annual reports and experience from prior year`s examinations. In deciding the scope of the examination the guiding factor is the risk of errors in the accounting records. The result of the audit is reported in the audit report.

A precondition for good planning is that the auditor has an overview of the company`s operations, competitive position, organization, information system, etc. The planning phase shall result in an overall plan for the examination and a programm for how the work is to be performed.

When the auditor is determining the emphasis and scope of his work, the guidelines shall be the principles of materiality and risk. The auditor shall plan and perform his work in such a way that in the normal case he would detect errors or circumstances that would affect his attitude to the annual report or the administration. Judging what in

a specific instance is material bases on the auditor's own professional experience.

The basis for good planning is knowledge of the company's operations. In order to gain this knowledge the auditor needs to perform a preparatory information-gathering.

The auditor must also make a schematic review of the company's accounting and reporting systems. Significant value has the auditor's knowledge and experience from previous years. A major part of the material that is assembled during the informationgathering can be used for several years.

The auditor's choice of audit methodology is primarily effected by the environment and the internal controls. A well-functioning internal control system reduces the risk that intentional or unintentional errors result in losses to the company. Internal controls can vary between different companies and between different parts of the same company. The form of the internal control depends on many factors, such as the company's operations and size, the degree of computerization, the geographical spread etc.

It is a question for the auditor to achieve his audit objectives in the most effective possible manner. Where it is feasible he does this by relying on the company's internal control and where it is not feasible by making substantive tests.

The auditor should perform some audit steps on the internal control system as part of his administration audit, even though in his examination of the annual report he does not rely on it and elects to perform substantive tests.

Each audit assignment must be organized in such a way as to achieve high and even quality. This applies particulary on assignments where the audit is a product of teamwork. The concept of assignment includes planning of the work, the division of the work, administration and performance on the assignment.

As a part of planning of every assignment there should be prepared a time and expense budget.

When the auditor uses assistants he must assure they have the training and experience required for the work required for the work assigned to them and that they receive the necessary instructions. An

experienced auditor should supervise less experienced assistants during the course of the work. All work performed should subsequently be reviewed by the auditor who is responsible for the assignment.

On certain assignments it is necessary to use tax experts and legal, technical or other expertise in the audit work. The auditor's responsibility extends to the specialist's work.

The auditor shall express his opinion on the adoption of both income statement and the balance sheet in his audit report.

When planning his examination the auditor shall consider to what extent he can rely on the work performed by the internal auditors. The internal audit function works on behalf of the company management. This is one of the management's instruments for examining and evaluating the effectiveness and security of the internal control system. A task for internal audit is to analyze, verify and evaluate the internal control system and to generate recommendations for improvements.

The auditor has the possibility to rely on the work of the internal auditors to a greater or lesser extent depending upon the internal auditor's competence, objectivity and position in the company.

The auditor himself is always responsible for the final conclusions that form the basis for his reporting. He cannot transfer any part of the responsibility for the audit to the internal auditors.

Considering the general knowledge of the client company a general audit plan should be prepared. This should include the scope of the assignment, identified problem areas, the timing of the work and a time budget.

The planning is completed first when the work program is written. The work program builds on the knowledge of the company that the auditor has gained during his preparatory information-gathering, his study of the business environment and evaluation of the accounting system. Before the auditor draws up his detailed work program he has to evaluate the likelihood of significant errors in the financial statements. If the likelihood of such errors seems to be great, then increases the scope of the tests that must be performed.

Some audit procedures cannot be performed before the financial statements and the annual reports have been prepared. It is often wise to perform as much as possible of the work before the end of the accounting year.

The auditor shall be given the opportunity by the company to perform an examination of such a scope as he considers necessary. On his part the auditor should inform the company about the errors in the accounting records that he discovers during the course of his examination. The audit process concludes with the auditor reporting the results of his examination in the audit report. Before any critical comments are included in the audit report the auditor should where possible inform the company management of his observations, thereby giving an opportunity for explanations and coorection. The audit report includes a statement whether the annual report has been prepared in accordance with the legislation.

During the course of the auditor makes many observations and assembles much information. All this information should be currently documented by the auditor (or his assistants) to provide him with a basis for his final evaluation and reporting. The documentation shall cover all stages in the audit process, that is planning, execution and reporting. The documentation includes the notes of the work performed, the audit programs, copies of the client's accounting records and other reports issued by the auditor.

In Estonia the practice of auditing has developed during the last years in connection with the growth in the number of limited companies. The large audit firms are multinational enterprises and increasing concentration in Estonia has been accompanied by a process of internationalization. The expansion of big firms raises an interesting issue related to the regulation of auditors in Estonia. The auditors are disciplined by the official Estonian Accounting Board.

In conclusion, we need more researches on the auditing process, and about the consequences of concentration and internationalization in auditing. This needs to examine not only the situation in individual countries, but also to examine the international aspects of the changes.

FINANCIAL MANAGEMENT AND CORPORATE FINANCE IN ESTONIA: The Development of the Theory and Its Application

Vambola Raudsepp

Introduction

During last two years we have taught financial management and corporate finance at Tartu University according to the study programs that are used in the whole world. We have made several conclusions from our seperieuces.

There are several specific features in dealing with economic subjects at the universities of small states, where there subjects are taught in national lnguage. First of all the treatment is more univeral, as some subjects (microeconomics, corporate finance, accounting) are not so well developed and we do not teach them as thoroughly as it is done in well-developed countries. Therefore, the aim of our research is to review the different approaches and points of view that have been taken to the relationship between the financial management and corporate finance in the social sciences.

Conditions

Although finance and wholesaling and retailing have been the subjects of teaching at Tartu University since 1803, when the corresponding chair was founded, we are in the situation where it is necessary to rearrange the teaching of finance and accounting.

It must be stressed that the fundamental parts of the financial management and corporate finance theories have come to Estonia mainly from USA and we teach these disciplines at Tartu University according to that approach. Two main problems and difficulties come out of this fact:

1. As the Estonian economy has gone through the retrogress and Estonia has almost changed into the developing country, the theory of finance and accounting is not entirely applied in practice.

2. Economic terminology suitable for market economy conditions is only in the process of forming out. There are no equivalent words to the English terminology in Estonian. We have used the Finnish terminology as our languages are rather close but the economists in Finland also use the terminology in English without translating it.

Basic Concepts

It is clear that there are several possibilities for forming the corporate finance as a branch of study (or discipline), but corporate finance always deals with the acquisition and allocation of resources among the firm's present and potential activities and projects. This way financing decision (liabilities and equity) and investment decision (assets) reflect in balance sheet of firm. As accounting and corporate finance are very closely related to each other, they are taught in one department at Tartu University — Department of Finance and Accounting.

The next important problem is the internal structure (construction) of the discipline and its integration with the other branches of studies. Firstly, we are dealing with following specific aspects of corporate finance: financial accounting, analyses, mathematics, financial law, etc. The connection between these disciplines expresses the integration of corporate finance with other branches of studies. Although the discipline (corporate finance) relies on the material that is covered with the courses of economics, accounting and statistics, it is self-contained in that prior knowledge of those areas is useful but not essential.

Secondly, the development of the corporate finance as a branch of study in the national language of a small state (Estonia), teaching it at the national university (Tartu University) form a unique complex, especially for the social sciences. So it comes out that the corporate finance as a branch of study has great possibilities of development.

The procedures which characterize the science are generally referred to as tools, techniques, and methods. In this paper our concern will be primarily with the methods of science rather of choice, techniques and tools. Methods are rules of choice, techniques are the choices themselves. The financial manager of the firm must choose between the three major decisions: the investment decision, the financing decision, and the dividend decision.

Each must be considered in relation to the objective of the firm: an optimal combination of three decisions will maximize the value of the firm to its shareholders. According to our way of thinking corporate finance is one of applied sciences. Corporate finance as a branch of study has the fundamental and applied parts. Besides that it has its own arsenal of the methods of application in practice. Nowadays the theory of finance and also its research methods develop quickly. The contradiction is that there is no extensive and entire application of these appreciated methods and theory in Estonia. Paradox but local economic situation influences greatly the internal structure of the corporate finance and the development of it in Estonia.

In the process of teaching corporate finance at Tartu University we are dealing with the following subjects:

I Valuation Concepts.
The time value of money.
Asset valuation.
Risk and return.
Oprions and corporate finance.

II Capital budgeting.
Estimating project cash flows.
Risk in capital budgeting.
Estimating the project cost of capital.
Corporate strategy and capital budgeting decision.

III Long-term financing strategy.
Sources of long-term financing.
Capital structure and cost of capital.
Dividend policy.

IV Debt financing.
The nature of debt.
Medium- and long-term debt.
Lease financing.

V Financial planning and control.
The basic financial statements.
Financial planning and budgeting.

VI Working capital and marketable securities.
Managing accounts receivable.
Managing inventories.
Short-term financing.

VII Special topics in corporate finance.
Tarkeovers and the market for corporate control.

International financial management.
Bankruptcy and reorganization.

Conclusions and Final Remarks

1. In order to understand better the changing role of the financial manager, it is useful to trace the evolution and the changing character of finance as an academic discipline. Usually everybody deals with the corporate finance of this century but at the beginning of the previous century A. Wagner whose theoretical research had a great influence on the evolution of the theory of finance in Europe worked at Tartu University. For the last ten years the process of development of corporate finance has been especially rapid. Because of that finance has changed from primarily a descriptive study to one that enconpasses rigorous analysis and normative theory; from a field that was concerned primarily with the procurement of funds to one that includes the management of assets, the allocation overall market; and from a field that emphasized external analysis of the firm to one that stresses decision marking within the firm.

2. Every scientific discipline that is a subject of teaching in the national language at national university changes into a part of national culture of this country. We must take this fact into consideration especially in the process of developing the internal structure (construction) of this discipline. From there come the specific features of teaching and developing the corporate finance in Estonia.

3. The representatives of the applied sciences should also search the character and methodology of their disciplines.

The objective of methodology is the improvement of the procedures and criteria emloyed in the conduct of scientific research. Methodology is often referred to as the logic of science. The economists of Tartu University (Uno Mereste, Raimund Hagelberg, Vambola Raudsepp) have already many years dealt with the problems of the logic of science.

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THE NEW FORMAT OF THE INCOME STATEMENT IN THE REPUBLIC OF ESTONIA

Lehte Alver

From 1991 the market economy principles were introduced in the Estonian accounting system. The new principles of organizing of accounting and a new annual report (that includes new formats of balance sheet, income statement and statement of changes in financial position and notes) are used. Annual report must be audited.

The format of the balance sheet has been designed like used in American practice, beginning with current assets. There have not been essential changes in the format of balance sheet but the income statement has been changed three times already. The new format of income statement was introduced on January 1994.

The new format of the income statement represents the "type of expenditure" format. That kind of format is traditional in Germany. It is oriented to production. The idea of it is that the indicator of company's performance is not only the sales, but also inventories produced or taken from stock and the value of resources used for creating and improving fixed assets. The typical characteristic of such kind of the income statement is that income and expenses are given according to their type, the place where they are incurred is not taken into account.

The gross performance consists of net sales, the change in work-in-process and finished goods (the difference in values compared with the previous year; the decrease is reduced), own work capitalized and other gains. The other gains are like income from sold fixed assets, state donation, income resulting from changes in currency rates in short-term accounts payable and other.

Gross performance is matched with the following business expenses:

a) cost of goods and raw materials;

b) other operating expenses, such as rent expenses advertising expenses, accounting and auditing fees, bad debt expenses and other;
c) staff expenses have to be split into wages and salaries, fringe benefits, social security tax, medical care tax, old age pensions (non state);
d) depreciation, amortization and allowances. The last item (allowances) includes reduction of value of Fixed Assets and Inventory Allowances (according with LCM principle);
e) other expenses connected with miscellaneous gains, for example, losses from sold fixed assets' items, losses resulting from changes in currency rates in short-term accounts payable and other.

After deduction of business expenses from gross performance income before financial income and expenses is received (the first income).

The next item of the income statement is financial income (dividends received, income from stocks sold, interest income from long-term investments, income from currency translations of investments abroad and e.t.c). Financial expenses are connected with financial income. They are dividends payed, losses from stocks sold and e.t.c. Changes in value of financial investments (LCM principle is followed) are also shown here. Taking into account financial income and financial expenses income (loss) from ordinary (continuing) operations or income before, extraordinary items are calculated. The closing items of income statement are extraordinary items (as well as income and expenses), income before taxes, income tax and net income (loss).

The new format of the income statement in Estonia represents "type of expenditure" format. It is a new stage in the development of our accounting, that recquires accountants and financial analysts with higher qualification. It provides valuable data that could provide insight into the financial condition and performance of the firm. The factor analysis of dynamics of income is very useful. Under this method by using of the data of the income statement net income could be expressed as a yield of the following factors:

$$\text{net incom} = \text{gross performance} \times \frac{\text{net sales}}{\text{gross performance}} \times \frac{\text{operating income}}{\text{net sales}} \times$$

$$\times \frac{\text{income in ordinary operations}}{\text{operating income}} \times \frac{\text{IBIT}}{\text{income in ordinary operationce}} \times \frac{\text{net income}}{\text{IBIT}}$$

From this formula it is possible to derivate many other formulas if to take into account that

$$1)\ \frac{\text{IBIT}}{\text{income in ordinary operatsions}} \times \frac{\text{net income}}{\text{IBIT}} = \frac{\text{net income}}{\text{income in ordinary operatsions}}$$

$$2)\ \frac{\text{net sales}}{\text{gross performance}} \times \frac{\text{operating income}}{\text{net sales}} = \frac{\text{operating income}}{\text{gross performance}}$$

$$3)\ \frac{\text{opetating income}}{\text{net sales}} \times \frac{\text{income in ordinary operations}}{\text{operating income}} = \frac{\text{income in ordinary operations}}{\text{net sales}}$$

$$4)\ \text{gross performance} \times \frac{\text{net sales}}{\text{gross performance}} = \text{net sales}$$

$$5)\ \text{net sales} \times \frac{\text{operating income}}{\text{net sales}} = \text{operating income}$$

$$6)\ \text{operating income} \times \frac{\text{income in ordinary operations}}{\text{operating income}} = \text{income in ordinary operations}$$

$$7)\ \text{income in ordinary operations} \times \frac{\text{IBIT}}{\text{income in ordinary operations}} = \text{IBIT}$$

$$8)\ \text{IBIT} \times \frac{\text{net income}}{\text{IBIT}} = \text{net income}$$

Given formulas make it possible to improve the analysis and bring out the influence of different factors.

Using only "the type of expenditure" format is a restriction because it is impossible to calculate gross margin, operating income and related financial ratios according to that (format). The traditional format of the income statement in Anglo-Saxon countries is the "functional" format. The main indicator of company's performance is sales. Expenses are structured by "cost centres" or functions where they are incurred. By the EC 4th directive both formats are accepted, the new Accounting Law will include both of them.

The Format of the Income Statement (used in Estonia from the First of January 1994)

1. Net Sales
2. Changes in Work-in Process and Finished Goods
3. Own Work Capitalized
4. Other
5. Gross Performance (1. + 2. + 3. + 4.)
6. Cost of Raw Materials and Goods
7. Miscellaneous Operating Expenses
8. Staff Expenses
8a. Wages and Salaries
8b. Social Tax, Medical Care Tax, Other Staff Taxes
8c. Pension Expenses
9. Depreciation and Allowances
9a. Depreciation and Decrease in the Value of Fixed Assets
9b. Inventory Allowances
10. Other
11. Total Business Expenses (6. + 7. + 8. + 9. + 10.)
12. Income Before Financial Income and Expenses (5. – 11.) (Operating income)
13. Financial Income
13a. Financial Income Related to Stocks
13b. Financial Income from Long-Term Investments
13c. Gains from Changes in Currency Rates of Investments in Abroad
13d. Other
14. Financial expenses
14a. Financial Expenses Related to Stocks
14b. Interest Expenses
14c. Losses from Changes in Currency Rates of Investments Abroad
14d. Changes in Value of Financial Investments
14e. Other
15. Income (Loss) in Ordinary operations (Income (Loss) before Extraordinary Items) (12. + 13. + 14.)
16. Extraordinary Income
17. Extraordinary Expenses
18. Income (Loss) before Income Taxes (15. + 16. – 17.)
19. Income Tax
20. Net Income (Loss) (18. – 19.)

FINDING (ENGLISH) WORDS TO DEFINE BALANCE SHEET ITEMS

Jaan Alver

Interpretation of the financial statments is in tight connection with the terminology of accounting. During the 20th century the English language has established itself as the world language of business and, hence, of accounting. The accounting terminology in several well-developed countries was formed on the basis of terminology in English strongly influenced by the terms used in the USA this century. But the Estonian accounting terminology was initially developed on the basis of the German language and, during the last 50 years it was strongly influenced by the Soviet accounting system and the Russian language and terminology. Unfortunately, the Russian terms, many of which, have, in turn, been borrowed from other languages (mainly English) are incorrectly used. Many terms have been under the influence of the socialist ideology and the command economy, have even become misinterpreted.

The English terminology used in the financial statements has also shortcomings. We see a multitude of names, expressions and definitions, a myriad of financial terms and relationships reflected in the financial statements. We know the meaning of the words used separatly, but, used collectively, they can be mystifying. The individual words "assets", "capital", "debts", "liabilities" are familiar to us, but we are not sure how they fit together to determine the viability of the business. Articles written about the financial statement analysis do not always help — they seem to come up with a new concept each month. The relationships between different parts and items of the balance sheet and terminology used in the balance sheet are studied in this paper.

There are several terms used as synonyms by many authors when the others make difference between them. Let's examine, for example, the following two groups of balance sheet terms:

1) net assets, net worth, owners' equity, owners' capital, stockholders' equity, shareholders' equity, capital;
2) net current assets, (net) working capital, circulating capital.

Using such terms in connection with the balance sheet causes a complicated question: where should they be placed in the balance sheet — to the assets side or liabilities and owners' equity (equities) side. It is clear that the substance is really different. The initial assumption in this paper is: **capital should be shown under liabilities and owners' equity (or, to be more exact, "capital" as noun could be used to describe items of liabilities and owners' equity side of balance sheet)**[10].

In the opinion of the author of this paper the relationships between the discussed items of balance sheet could be interpreted as in the Exhibit 1. As we can see, it is impossible to calculate the amount of net assets **directly**. For that reason, an **indirect way** to derivate net assets from owners' equity (or stockholders' equity) should be used. We can say that **mathematically** the amount of net assets is **equal** to the owners' equity but they **are not synonyms** because one of them is located on the left-hand (assets) side and the other on the right-hand (equities or capital) side of balance sheet. In our opinion we net assets should be defined as an amount of **assets** acquired by the owners' investments. Owners' equity shows the owners' **claim** (a legal right) to a portion of business assets, called **net assets**. Analogical approach is used for derivation **net working capital** and **net current assets** (see Exhibit 1). Firstly we must make difference between **gross working capital** and **net working capital**. **Gross working capital** should be defined as **total claims** to (gross) current assets or **funds invested** in a company's (gross) current assets.[11] Before defining net working capital it is useful to remind the **matching principle**, one of the oldest principles in finance which can be stated as follows: **Finance short — term needs with short-term sources, and finance long — term needs with long-term sources** [4, p.731].

The idea expressed in this principle is to "match" the maturity of the source of funds with the length of time the funds are needed. A certain balance should exist between the long term assets and funds on the one hand and the short-term assets and funds on the other and because long-term assets in a company should be matched with corresponding

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10 Author of this paper has studied this problem thoroughly and agrees to discuss about it separately.

11 That definition is contributed by [1, 2 and 3].

long-term liabilities and vice versa.[12] Therefore **net working capital would be defined as owners' claim to current assets and net current assets as an amount of current assets acquired by the owners' investment.** Net working capital is like a "current" version of the owners' equity. The author of this paper does not consider the following definition as correct: net working capital — amount of the current assets that the firm has available to respond to its business needs after repaying all its current liabilities [1]. In that case the term "net current assets" should be used. Declaration that like other balance sheet terms, working capital could be looked at from either the assets side or liabilities side [5, p. 27] should be taken as in correct.

It should be noted that **mathematically** the amount of gross working capital is **equal** to (gross) current assets but they **are not synonyms** because they locate on different sides of the balance sheet. Similarly net working capital and net current assets **are not synonyms**. Unfortunately, it is impossible to derive net working capital **directly** from the right-hand side of the balance sheet as well as net current assets **directly** from the left-hand side of the balance sheet. Because of the fact that an **indirect way** is used for calculations:

NET WORKING CAPITAL = CURRENT ASSETS – CURRENT LIABILITIES
NET CURRENT ASSETS = CURRENT ASSETS – CURRENT LIABILITIES

As we can see, for calculating net working capital and net current assets the same formula is used. **Mathematically** the amount of net working capital is **equal** to net current assets but logically they **cannot be synonyms** on the reason of locating on different sides of the balance sheet.

On the Exhibit 1 correct usage of the other English terms to define Balance Sheet items is shown.

The indistinctnesses described above appear in the essential interpretation of special terms used. They are not so important **for calculations** because **mathematically** the result is the same. But from cognitive point of view it is very important to understand: net assets, net current assets, net working capital, net tangible assets etc. are the

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[12] More about matching of needs and sources is written, for example, in [4, pp. 731–733] and [5, p. 94].

results of subtractions only or separate accounting categories with specific substance. This paper supports the last expression.

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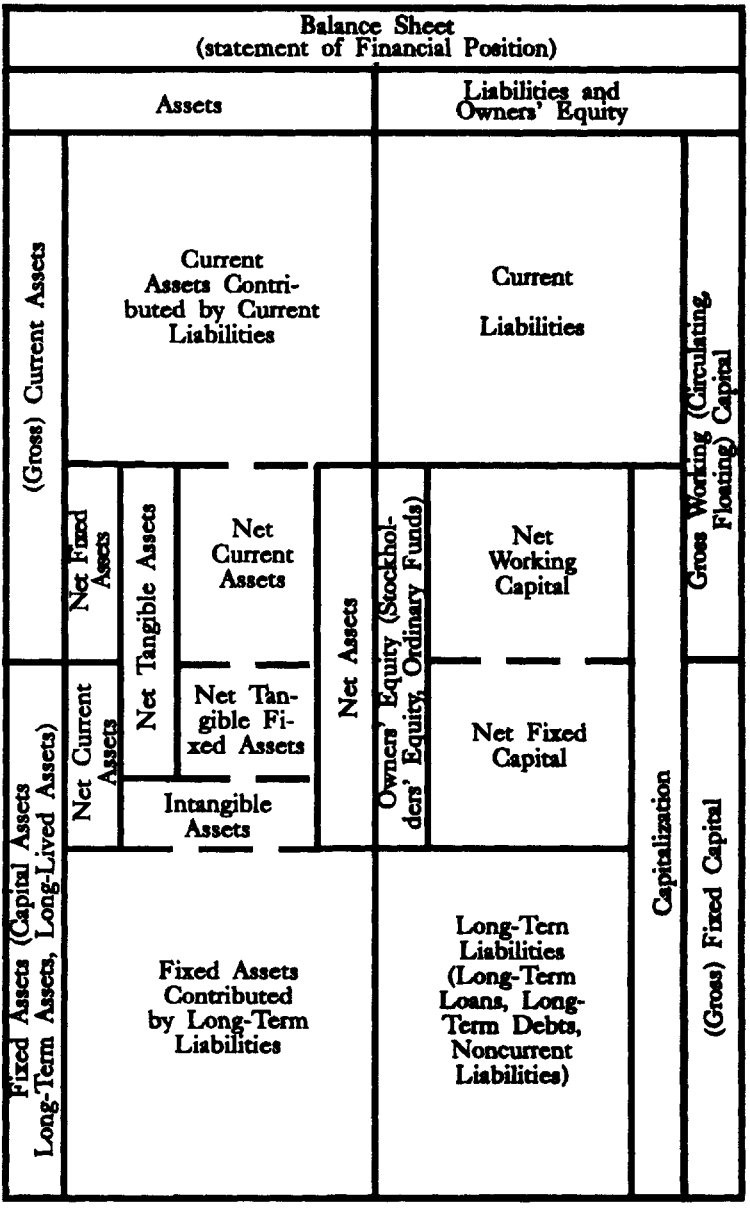

Exhibit 1. Structure of the Balance Sheet

ABOUT THE AUTHORS

Toomas Haldma	Assoc. Professor of Accounting, Department of Finance and Accounting, Tartu University
Joseph A. McHugh	Professor of Accounting, Bentley College
George A. Hachey	Assoc. Professor of Finance, Bentley College
Siim Kallas	Covernor of the Bank of Estonia, Assoc. Prof. of Money and Banking, Department of Finance and Accounting, Tartu University
Mart Sõrg	Professor of Money and Banking, Department of Finance and Accounting, Tartu University
Jay Sultan	Assoc. Professor of Finance, Bentley College
Matti Viren	The Bank of Finland, Prof. of Economics, Univesity of Turku
Kaido Kallas	Prof. of Economics, Tallinn Technical University
Vambola Raudsepp	Professor of Corporate Finance, Department of Finance and Accounting, Tartu University
Lehte Alver	Assoc. Professor of Accounting, Department of Finance and Accounting, Tartu University
Jaan Alver	Assoc. Professor of Accounting, Department of Finance and Accounting, Tartu University